SERVICE MANUAL

AA - 1 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-32S12	RM-Y116	US	SCC-F84V-A
KV-32S12	RM-Y116	Canadian	SCC-F85S-A
KV-32S16	RM-Y121	US	SCC-F84W-A
KV-32S16	RM-Y121	Canadian	SCC-F85T-A
KV-32TW67	RM-Y118	US	SCC-F84Y-A
KV-32TW68	RM-Y118	US	SCC-H76A-A
KV-32V16	RM-Y121	US	SCC-F84X-A
KV-32V16	RM-Y121	Canadian	SCC-F85R-A

Note :

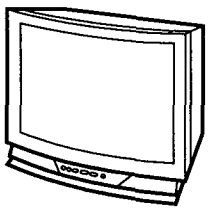
1. Adjustment Manual for this model is separately published.

	Adjustment Manual
Part No.	9-965-038-01

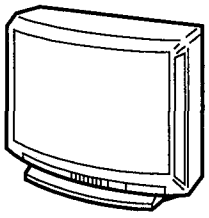
RM-Y116

RM-Y118

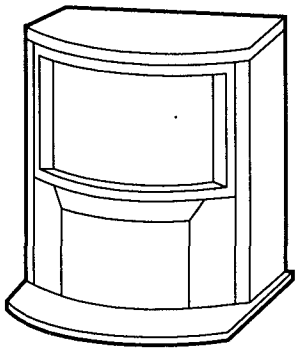
RM-Y121



KV-32S12/32S16



KV-32V16



KV-32TW67/32TW68

MICROFILM

TRINITRON® COLOR TV

SONY®

※ Please file according to model size..... ▩

SPECIFICATIONS

KV-32S12

Television system	American TV standards
Channel coverage	VHF : 2 - 13 UHF : 14 - 69 CATV : 1 - 125
Picture tube	Hi-Black™ Trinitron® tube 32-inch picture measured diagonally
Antenna	75-ohm external antenna terminal for VHF/UHF
Input	VIDEO and S VIDEO S VIDEO IN Y : 1 Vp-p, 75-ohms unbalanced, sync negative C : 0.286 Vp-p (Burst signal), 75-ohms Video : 1 Vp-p, 75-ohms unbalanced, sync negative Audio : 500 mVrms (100% modulation) Impedance : 47 kilo-ohms
Speaker output	5 W x 2
Power requirements	120 V AC, 60 Hz
Power consumption	When in use : 190 W In standby : 6 W
Dimensions (W/H/D)	781 x 714 x 613 mm (30 3/4 x 28 1/8 x 24 1/4 inches)
Weight	69 kg (152 lbs 9 oz)
Supplied accessories	Remote Commander RM-Y116 (1) with 2 size AA (R6) batteries
Optional accessories	U/V mixer EAC-66 Connecting cable VMC-810S/820S, VMC-720M, YC-15V/30V, RK-74A

KV-32S16

Television system	American TV standards
Channel coverage	VHF : 2 - 13 UHF : 14 - 69 CATV : 1 - 125
Picture tube	Hi-Black™ Trinitron® tube 32-inch picture measured diagonally
Antenna	75-ohm external antenna terminal for VHF/UHF
Input	VIDEO and S VIDEO S VIDEO IN Y : 1 Vp-p, 75-ohms unbalanced, sync negative C : 0.286 Vp-p (Burst signal), 75-ohms Video : 1 Vp-p, 75-ohms unbalanced, sync negative Audio : 500 mVrms (100% modulation) Impedance : 47 kilo-ohms
Output	AUDIO OUT : More than 408 mVrms at the maximum volume setting (variable) More than 408 mVrms (fix) Impedances : 5 kilo-ohms
Speaker output	5 W x 2
Power requirements	120 V AC, 60 Hz
Power consumption	When in use : 195 W In standby : 6 W
Dimensions (W/H/D)	781 x 714 x 613 mm (30 3/4 x 28 1/8 x 24 1/4 inches)
Weight	69 kg (152 lbs 9 oz)
Supplied accessories	Remote Commander RM-Y121 (1) with 1 size AA (R6) battery
Optional accessories	U/V mixer EAC-66 Connecting cable VMC-810S/820S, VMC-720M, YC-15V/30V, RK-74A

KV-32TW67/68

Television system	American TV standards
Channel coverage	VHF : 2 - 13 UHF : 14 - 69 CATV : 1 - 125
Picture tube	Hi-Black Trinitron® tube 32-inch picture measured diagonally
Antenna	75-ohm external antenna terminal for VHF/UHF
Input	VIDEO and S VIDEO S VIDEO IN Y : 1 Vp-p, 75-ohms unbalanced, sync negative C : 0.286 Vp-p (Burst signal), 75-ohms Video : 1 Vp-p, 75-ohms unbalanced, sync negative Audio : 500 mVrms (100% modulation) Impedance : 47 kilo-ohms
Output	AUDIO : More than 408 mVrms at the maximum volume setting (variable) More than 408 mVrms (fix) Impedances · 5 kilo-ohms
Speaker output	5 W x 2 Audio frequency response : Front 80 Hz - 20 KHz
Power requirements	120 V AC, 60 Hz
Power consumption	When in use : 195 W In standby : 6 W
Dimensions (W/H/D)	895 x 1117 x 700 mm (35 1/4 x 44 x 27 5/8 inches)
Weight	108.6 kg (239 lbs)
Supplied accessories	Remote Commander RM-Y118 (1) with 1 size AA (R6) battery
Optional accessories	U/V mixer EAC-66 Connecting cable VMC-810S/820S, VMC-720M, YC-15V/30V, RK-74A

KV-32V16

Television system	American TV standards
Channel coverage	VHF : 2 - 13 UHF : 14 - 69 CATV : 1 - 125
Picture tube	Hi-Black™ Trinitron® tube 32-inch (736mm) picture measured diagonally
Antenna	75-ohm external antenna terminal for VHF/UHF
Input	VIDEO and S VIDEO Video : 1 Vp-p, 75-ohms unbalanced, sync negative Audio : 500 mVrms (100% modulation) Impedance : 47 kilo-ohms
Output	AUDIO OUT : More than 408 mVrms at the maximum volume setting (variable) More than 408 mVrms (fix) Impedances : 5 kilo-ohms
Speaker output	5 W x 2
Power requirements	120 V AC, 60 Hz
Power consumption	When in use : 205 W In standby : 6.5 W
Dimensions (W/H/D)	801 x 664 x 603 mm (31 5/8 x 26 1/4 x 23 3/4 inches)
Weight	70 kg (154 lbs 2 oz)
Supplied accessories	Remote Commander RM-Y121 (1) with 1 size AA (R6) battery RM-CM101
Optional accessories	U/V mixer EAC-66 Connecting cable VMC-810S/820S, VMC-720M, YC-15V/30V, RK-74A

Design and specifications are subject to change without notice.

(CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION REPLACE THESECOMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFEOPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED

(ATTENTION)

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURTCIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE DELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DEPANNAGE
LE CHÁSSIS DE CE RECEPTEUR EST DIRECTEMENT RACCORDÉ Á L'ALIMENTATION SECTEUR

ATTENTION AUX COMPOSANTS RELATIFS ÁLA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MAPQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES CONT D'UNEIMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ

SAFETY CHECK-OUT

(US model only)

After correcting the original service problem, perfom the following safety checks before releasing the set to the customer

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recom mend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate;be suspicious of your HV meter if sets always have low HV.
9. Check the antenna temminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers) . Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to usc these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground;the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

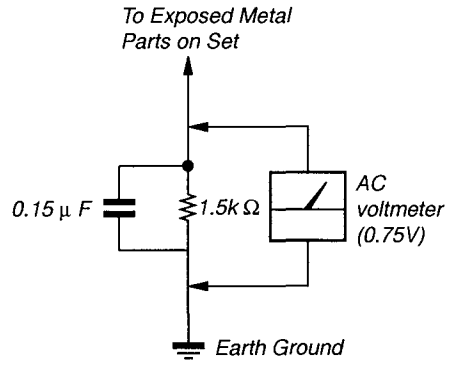


Fig. A. Using an AC voltmeter to check AC leakage.

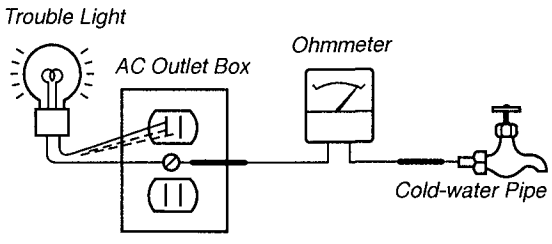


Fig. B. Checking for earth ground.

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The Instruction Manual of KV-32V16.

SECTION1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

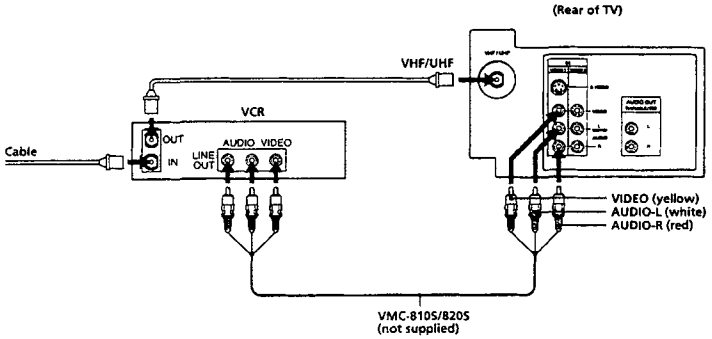
Connecting an antenna/cable TV system with a VCR

To connect your VCR to the TV, first check the model number of your TV and select the corresponding connection. For details on connection, see the instruction manual of your VCR. Before making connection, disconnect the AC power cords of the equipment to be connected.

After making these connections, you will be able to do the following:

- View the playback of video tapes
- Record one TV program while viewing another program
- Watch two TV programs at once using a window picture (picture-in-picture)

Without a cable box

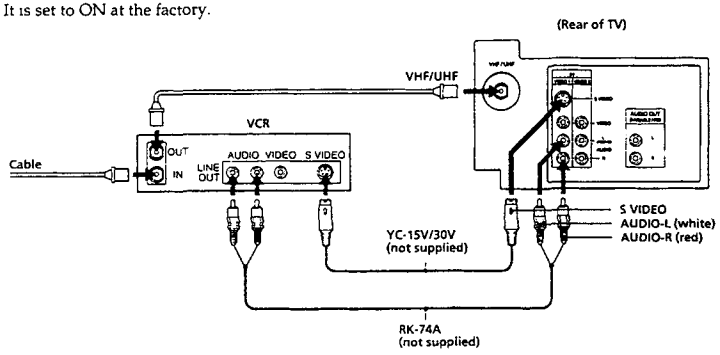


Note

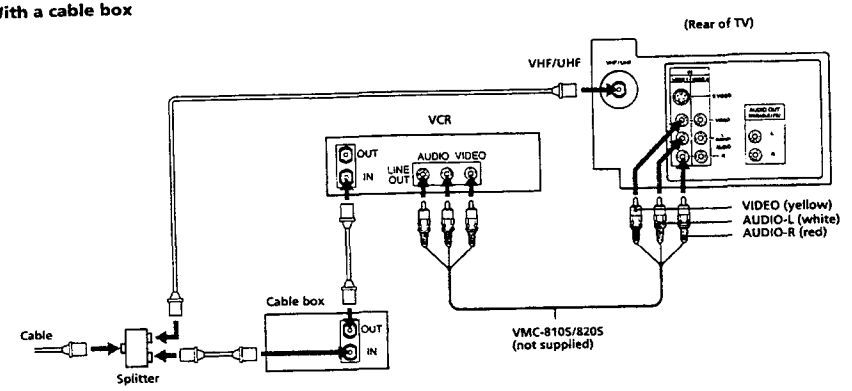
- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 1 IN on the TV.

To an S video equipped VCR without a cable box

If your VCR has an S video output jack, hook up as follows and then set S VIDEO to ON on your TV (page12). It is set to ON at the factory.



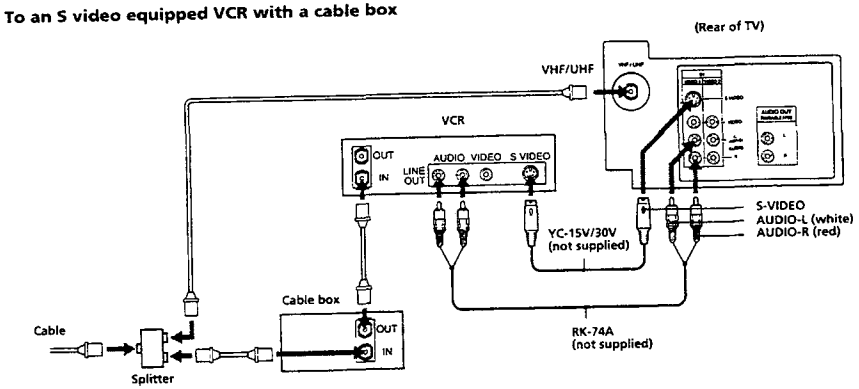
With a cable box



Note

- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 1 IN on the TV.

To an S video equipped VCR with a cable box

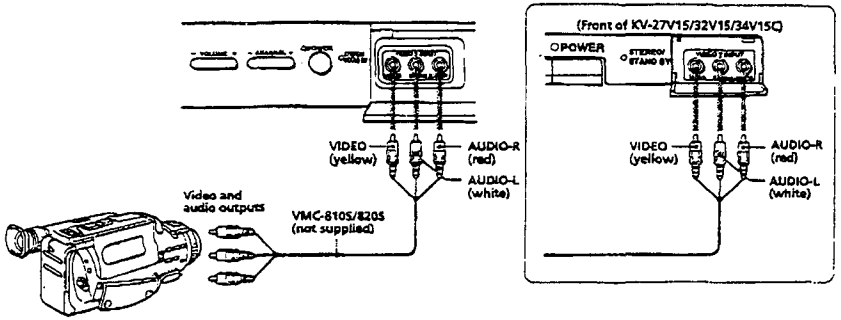


Note

- Video signals are composed of Y (luminance) and C (chroma) signals. The S connection sends the two signals separately preventing degradation, and gives better picture quality compared to conventional connection.

Connecting a camcorder

This connection is convenient for viewing a camcorder.

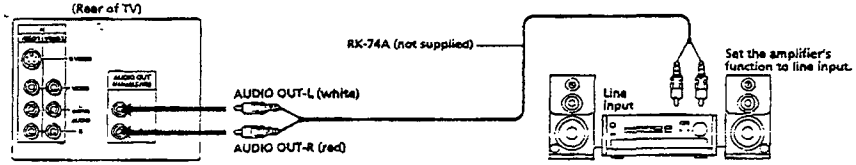


Note

- To connect a monaural camcorder, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 2 INPUT on the TV.

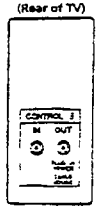
Connecting an audio system

when connecting audio equipment, see page 20 for more information.



Connecting other Sony equipment with CONTROL S jack

Connect the supplied cable box controller (Cable Mouse) to the CONTROL S OUT jack. Refer to the the Cable Mouse's manual for details on the connection.



Make the following connections to control the TV and connected equipment with one remote commander.

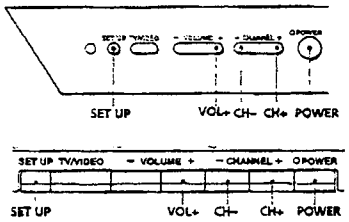
- To control other Sony equipment with the TV's remote commander, connect the input of the equipment to CONTROL S OUT jack on the TV.
- To control the TV with the remote commander of other Sony equipment, connect the output of the equipment to CONTROL S IN jack on the TV.

Step 3: Setting up the TV automatically (AUTO SET UP)

For cable box control (Cable Mouse) users

Connect the supplied cable box controller (Cable Mouse) to the CONTROL S OUT jack. Refer to the Cable Mouse's manual for details on the connection.

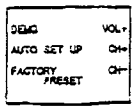
You can set up your TV easily by using the AUTO SET UP feature. It presets all the receivable channels.
To set up the TV manually, see "Setting cable TV on or off" (page12) and "Presetting channels"(page12).
If the TV is set to a video input, you cannot execute AUTO SET UP. Press TV/VIDEO or TV so that a channel number appears.



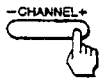
1 Press POWER to turn the TV on.

2 Press SET UP on the front of the TV.

The menu appears.



3 Press CH +.



"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed. If the TV receives cable TV channels, CATV is set to ON automatically.

Notes

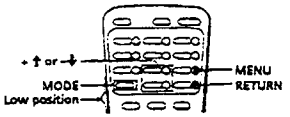
- If more than 90 seconds elapse after you press a button, the menu disappears automatically.
- In case of using the AUX connector, press the TV button on the remote commander first and make sure that "AUX" is displayed beside the channel number on the screeen. Then follow steps 2 and 3 above to perform AUTO SET UP. (KV-32V15 only)

DEMO: To browse the main functions,
Press VOL + in step 3. The functions and menus are displayed one by one.

FACTORY PRESET: To restore the factory settings when you are confused about the TV settings,
Press CH− in step 3. The settings of picture and sound are restored to the factory setting.

Erasing or adding channels

After AUTO SET UP you can erase unnecessary channels or add the channels you want. Preset channels during the day rather than late at night, when some channels may not be broadcasting.



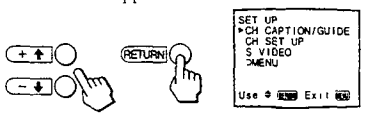
1 Press MENU.

The main menu appears.

(continued)

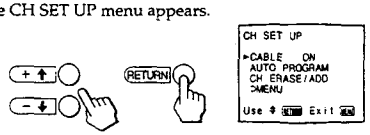
2 Press + ↑ or – ↓ to move the cursor (▶) to SET UP and press RETURN.

The SET UP menu appears.



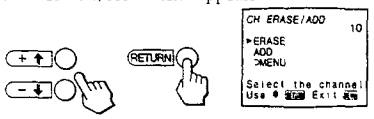
3 Press + ↑ or – ↓ to move the cursor (▶) to CH SET UP and press RETURN.

The CH SET UP menu appears.



4 Press + ↑ or – ↓ to move the cursor (▶) to CH ERASE/ADD and press RETURN.

The CH ERASE/ADD menu appears.



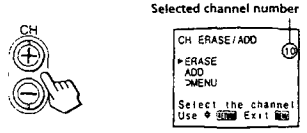
5 Erase and/or add the channel you want:

To erase an unwanted channel

(1) Make sure the cursor (▶) is beside ERASE.

(2) Press CH +/– to select the channel you want to erase and,

Selected channel number



(3) press RETURN.

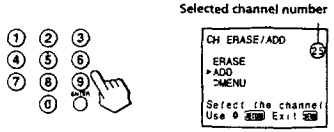
The indication "–" appears beside the channel number, showing that the channel is erased from the preset memory.

To add a channel that you want

(1) Press + ↑ or – ↓ to move the cursor (▶) to ADD.

(2) Press the 0 – 9 buttons to select the channel you want to add and press ENTER and,

Selected channel number



(3) press RETURN.

The indication "+" appears beside the channel number, showing that the channel is added to the preset memory.

6 *To erase and/or add other channels, repeat step 5.*

7 *When you finish, press MENU.*

Notes

- If you erase or add a VHF or UHF channel, the cable TV channel with the same number is also erased or added, and vice versa.
- Erasing and adding channels are also available for the AUX input. (KV-32V15 only)

Setting cable TV on or off

For cable box control (Cable Mouse) users

Refer to the supplied Cable Mouse manual on how to set cable TV.

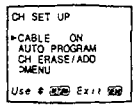
If you have connected the TV to a cable TV system, set CABLE to ON, the factory setting. If not, set CABLE to OFF.

You do not have to do this procedure if you execute AUTO SET UP (page **10**). Do this procedure only when you want to set it manually.

1 Press MENU.

2 Press + ↑ or – ↓ to move the cursor (▶) to SET UP and press RETURN.

3 Press + ↑ or – ↓ to move the cursor (▶) to CH SET UP and press RETURN.

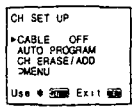


4 Set CABLE to ON or OFF:

(1) Make sure the cursor (▶) is beside CABLE and press RETURN.

If the cursor is not beside CABLE, press + ↑ or – ↓ to move the cursor and press RETURN.

(2) Press + ↑ or – ↓ to select ON or OFF and, press RETURN.



5 Press MENU to return to the original screen.

Note

- If CH SET UP appears in black, the TV is set to a video input and you cannot select CABLE. Press TV/VIDEO or TV so that a channel number appears.

Presetting channels

For cable box control (Cable Mouse) users

Refer to the supplied Cable Mouse manual on how to preset channels.

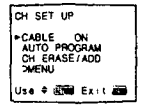
You can preset TV channels easily by using the AUTO PROGRAM feature.

You do not have to do this procedure if you execute AUTO SET UP (page **10**). Do this procedure only when you want to set it manually.

1 Press MENU.

2 Press + ↑ or – ↓ to move the cursor (▶) to SET UP and press RETURN.

3 Press + ↑ or – ↓ to move the cursor (▶) to CH SET UP and press RETURN.



4 Press + ↑ or – ↓ to move the cursor (▶) to AUTO PROGRAM and press RETURN.

"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed.

5 Press MENU to return to the original screen.

Notes

- If the CH SET UP menu appears in black, the TV is set to a video input and you cannot select AUTO PROGRAM. Press TV/VIDEO or TV so that a channel number appears.
- Presetting channels is also available for the AUX input. (KV-32V15 only)

Setting S video on or off

You can change the S VIDEO menu to ON or OFF.

1 Press TV/VIDEO to select VIDEO 1.

2 Press MENU.

3 Press + ↓ or – ↓ to move the cursor (▶) to SET UP and press RETURN.

4 Press + ↓ or – ↓ to move the cursor (▶) to S VIDEO and press RETURN.

5 Press + ↓ or – ↓ to select ON or OFF and press RETURN.

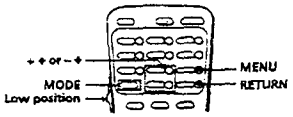
6 Press MENU to return to the original screen.

Notes

- If S VIDEO appears in black, set a video input to VIDEO 1.
- If you set S VIDEO to ON, the TV automatically receive S video signals whenever a VCR with S video is connected.

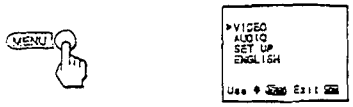
Changing the menu language

If you prefer Spanish to English, you can change the menu language.



1 Press MENU.

The main menu appears.



2 Press + ↓ or – ↓ to move the cursor (▶) to ENGLISH and press RETURN.

3 Press + ↓ or – ↓ to select ESPAÑOL and press RETURN.

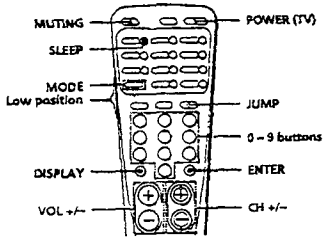
4 Press MENU to return to the original screen.

Note

- Certain parts of the ESPAÑOL menus remain in English.

Watching the TV

For cable box control (Cable Mouse) users



1 Press POWER (TV) to turn the TV on.

If "VIDEO" appears on the screen, press the TV/VIDEO or TV button so that a channel number appears.

2 Select the channel you want:

To select a channel directly

Press the 0 – 9 buttons and then press ENTER.

To scan through channels

Press CH +/– until the channel you want appears.

The channel can also be selected without pressing ENTER.

3 Press VOL +/– to adjust the volume.

Note

- Set the CABLE BOX/TV selector to TV.

Switching quickly between two channels

Press JUMP.

The channel you watched previously appears.

Pressing JUMP again switches back the channel.

Muting the sound

Press MUTING.

"MUTING" appears on the screen.

To restore the sound, press MUTING again, or press VOL +.

Displaying on-screen information

Use this feature to check the channel number, channel caption (if set), and MTS mode (if SAP is selected).

Press DISPLAY.

To cancel the display, press DISPLAY again.

Setting the Sleep Timer

The TV stays on for the length of time you specify and then shuts off automatically.

Press SLEEP repeatedly until the time (minutes) you want appears.

Each time you press SLEEP, the time changes as follows: 30 → 60 → 90 → OFF.

To cancel the Sleep Timer, press SLEEP repeatedly until "SLEEP OFF" appears, or turn the TV off.

Changing the VHF/UHF input to the AUX input

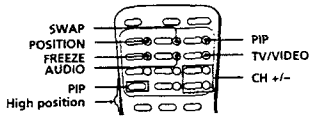
KV-32V15/34V15C only

Press TV.

Pressing TV again switches back to the previous input.

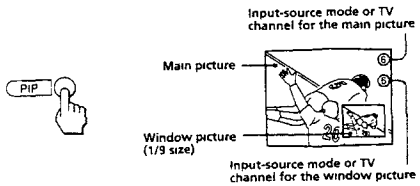
Watching two programs at a time —PIP

The Picture-in-Picture (PIP) feature allows you to watch both the main picture and a window picture simultaneously.
You can watch two TV channels at a time with this feature. See "Connecting an antenna/cable TV system with a VCR" (page 6) for connections.

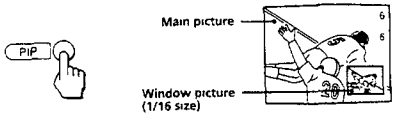


Displaying a window picture

Press PIP


Input-source mode or TV channel for the main picture
Main picture
PIP
Window picture (1/9 size)
Input-source mode or TV channel for the window picture

Press PIP again to display a smaller window picture.



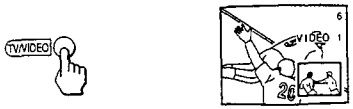
To remove the window picture, press PIP again.

Notes

- If the main picture is not receiving an image, the window picture may be in black and white.
- The window picture may be affected by the condition of the main picture.
- The window picture sound is also output from the VARIABLE/FIX AUDIO OUT jacks when you listen to

Changing the window picture input mode

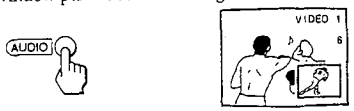
Press TV/VIDEO in the PIP control area to select the input mode.
Each time you press TV/VIDEO, "TV", "VIDEO 1", "VIDEO 2" and "VIDEO 3 (*except for KV-27S15/29RS15*)" appear in sequence.



A window picture will appear in the same input mode as the last time you used PIP

Listening to the sound of the window picture

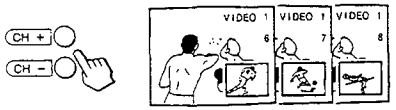
Press AUDIO.
The ♪ display appears for a few seconds, indicating that the window picture sound is being received.



To restore the main picture sound, press AUDIO again.

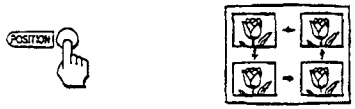
Changing TV channels in the window picture

Press CH +/– in the PIP control area.



Changing the position of the window picture

Press POSITION.
Each time you press POSITION, the window picture will move counterclockwise on the screen.



Freezing the window picture

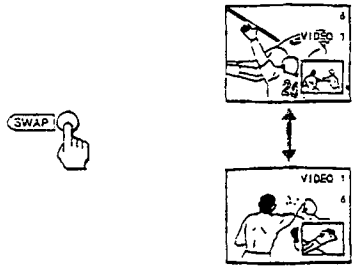
This feature is useful when you want to write down a recipe from a cooking program, a displayed address or a phone number and so on.

Press FREEZE.

To restore the normal screen, press FREEZE again.

Swapping the main and window pictures

Press SWAP.
Each time you press SWAP, the images from the main and window pictures switch places along with the sound.

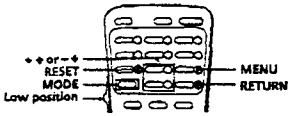


Note

- The channels being received through the AUX jack cannot be displayed as a window picture (*KV-32V15/34V15C only*).

Adjusting the picture (VIDEO)

When watching TV programs, you can adjust the quality of the picture to suit your taste.
You can adjust the picture of video input(s) as well. These settings are stored separately from those for the TV picture.

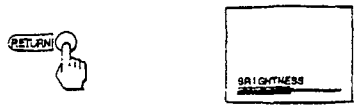


1 Press MENU.

2 Make sure the cursor (▶) is beside VIDEO and press RETURN.

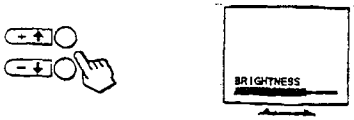
3 Select the item you want to adjust.
For example:
(1) To adjust brightness, press + ♦ or – ♦ to select BRIGHT and,

(2) press RETURN.



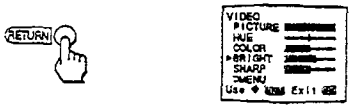
4 Adjust the selected item:

(1) Press + ↑ or – ↓ to adjust the item and,



(2) press RETURN.

The new setting appears in the VIDEO menu.



For details on each item, see "Description of adjustable items" below.

5 To adjust other items, repeat steps 3 and 4.

Description of adjustable items

Item	Press + ↑ to	Press – ↓ to
PICTURE	Increase picture contrast and give vivid color	Decrease picture contrast and give soft color
HUE	Make skin tones become greenish	Make skin tones become purplish
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
SHARP	Sharpen the picture	Soften the picture

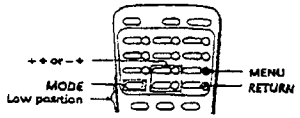
To restore the factory settings

Press RESET while the VIDEO menu is displayed.

All the settings except for PICTURE are restored to the factory settings.

Adjusting screen brightness automatically (LUMISPONDER)

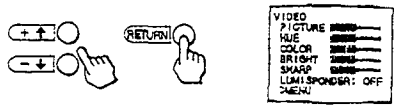
The LUMISPONDER feature adjusts the brightness of the screen automatically according to the ambient brightness. The LUMISPONDER function automatically adjusts the level set by the user in the VIDEO menu to the standard.



1 Press MENU.

2 Press + ↑ or – ↓ to select VIDEO and press RETURN.

3 Press + ↑ or – ↓ to select LUMISPONDER and press RETURN.

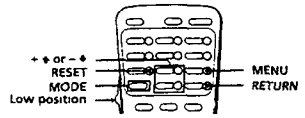


4 Press + ↑ or – ↓ to select ON or OFF and press RETURN.

Adjusting the sound (AUDIO)

You can adjust the quality of the TV sound to suit your taste.

You can adjust the sound of video input(s) as well. These settings are stored separately from those for the TV sound.



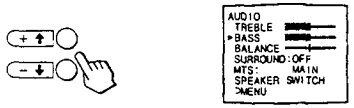
1 Press MENU.

2 Press + ↑ or – ↓ to select AUDIO and press RETURN.

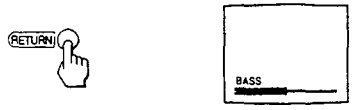
3 Select the item you want to adjust.

For example:

(1) To adjust bass, press + ↑ or – ↓ to select BASS and,



(2) press RETURN.

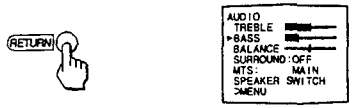


4 Adjust the selected item:

(1) Press + ↑ or – ↓ to adjust the item and,

(2) press RETURN.

The new setting appears in the AUDIO menu.



For details on each item, see "Description of adjustable items" below.

5 To adjust other items, repeat steps 3 and 4 above.

Description of adjustable items

Item	Press + ↑ to	Press – ↓ to
TREBLE	Increase the treble response	Decrease the treble response
BASS	Increase the bass response	Decrease the bass response
BALANCE	Emphasize the right speaker's volume	Emphasize the left speaker's volume

To restore the factory settings

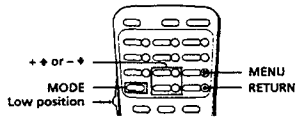
Press RESET while the AUDIO menu is displayed.

Note

- When SPEAKER (page 20) is OFF and AUDIO OUT (page 20) is FIXED condition, the sound is set to mid-level and it cannot be adjusted.

Listening to surround sound (SURROUND)

SURROUND feature simulates sound reproduction with the atmosphere of a movie theater or a concert hall. Surround sound is only effective for stereo programs.



1 **Press MENU.**

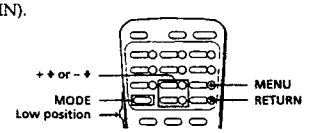
2 **Press + ↑ or – ↓ to select AUDIO and press RETURN.**

3 **Press + ↑ or – ↓ to select SURROUND and press RETURN.**

4 **Press + ↑ or – ↓ to select ON and press RETURN.**

Selecting stereo or bilingual programs (MTS)

The Multichannel TV Sound (MTS) feature allows you to enjoy stereo sound or Second Audio Programs (SAP) at your choice. The initial setting is stereo sound (MAIN).



1 **Press MENU.**

2 **Press + ↑ or – ↓ to select AUDIO and press RETURN.**

3 **Press + ↑ or – ↓ to select MTS and press RETURN.**

4 **Press + ↑ or – ↓ to select MAIN, SAP, or MONO and press RETURN.**

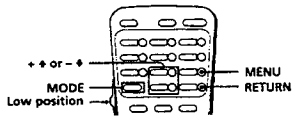
Choose	To
MAIN	Listen to stereo sound. The STEREO indicator on the TV lights up while a stereo broadcast is received.
SAP	Listen to bilingual programs. The sound of non-SAP programs will be muted when SAP is selected.
MONO	Reduce noise during stereo broadcasts.

Note

- Stereo and SAP sounds are subject to program sources.

Setting the speaker switch (SPEAKER)

You may switch off the TV speakers when, for example, you want to listen to the sound through a stereo system.

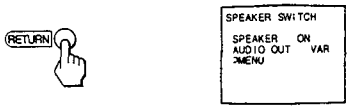


1 **Press MENU.**

2 **Press + ↑ or – ↓ to select AUDIO and press RETURN.**

3 **Press + ↑ or – ↓ to select SPEAKER SWITCH and press RETURN.**

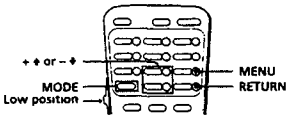
4 **Make sure the cursor (▸) is beside SPEAKER and press RETURN.**



5 **Press + ↑ or – ↓ to select ON or OFF and press RETURN.**

Setting audio out (AUDIO OUT)

You can select audio out to variable or fixed when SPEAKER is set to OFF.
Audio out is variable when SPEAKER is set to ON.



1 **Press MENU.**

2 **Press + ↑ or – ↓ to select AUDIO and press RETURN.**

3 **Press + ↑ or – ↓ to select SPEAKER SWITCH and press RETURN.**

4 **Press + ↑ or – ↓ to select AUDIO OUT and press RETURN.**

5 **Press + ↑ or – ↓ to select VAR or FIXED and press RETURN.**

VAR: Sound output varied according to the TV settings. You can adjust the volume, bass, treble and balance.

FIXED: Sound output is always fixed to a certain level. The volume, bass, treble and balance are also fixed to the factory settings.

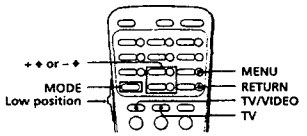
Customizing the channel number buttons (CH CAPTION/GUIDE)

For cable box control (Cable Mouse) users

Make the setting of Cable Mouse before customizing the channel number buttons.

You can choose up to 12 channels, caption each channel, and assign a specific channel number button to each channel. This feature allows you to select your favorite channels easily by name. For example, you can name channel 20 "ESPN," and assign the channel number 4 button to it.

Setting captions to favorite channels



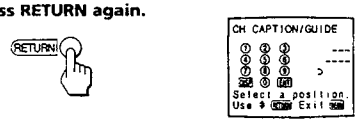
1 Press TV/VIDEO or TV to select TV mode.

2 Press MENU.

3 Press + ♦ or – ♦ to select SET UP and press RETURN.

4 Press + ♦ or – ♦ to select CH CAPTION/GUIDE and press RETURN.

5 Press RETURN again.



6 Press + ♦ or – ♦ to select a channel guide number button and press RETURN.

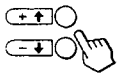
Numbers 0-9 and DISPLAY and ENTER are available for use as a customized channel number. Each time you press + ♦ or – ♦, the channel positions change to red in turns. The channel number button you select will be the one you press to call up your favorite channel.

7 Press + ♦ or – ♦ to select the channel that you want to caption and press RETURN.

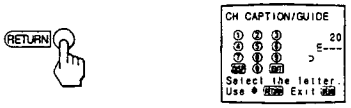
8 Enter the letters (up to four) to caption the channel:

(1) Press + ♦ or – ♦ to select the first letter.
Each time you press + ♦ or – ♦, the letter changes as shown below and,

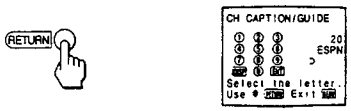
0↔1↔...↔9↔A↔B↔...↔Z↔&↔/↔_(blank space)



(2) press RETURN.



(3) Repeat steps (1) and (2) to select the remaining letters and press RETURN.



(continued)

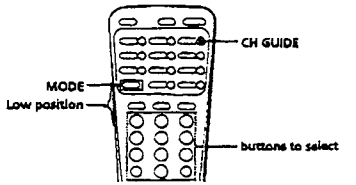
9 Repeat step 5 to 7 to caption other channels.

To erase a caption
Press RESET after step 5.

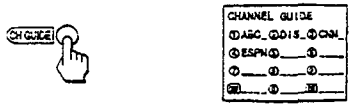
Notes

- The position number you already selected appears in yellow.
- If the CH CAPTION/GUIDE menu appears in black, the TV is set to a video input and you cannot select CH CAPTION/GUIDE.
- If more than 90 seconds elapse after you press a button, the menu disappears automatically.
- The channel caption/guide feature is not available for the AUX input. (KV-32V15/34V15C only)

Selecting a captioned channel



1 Press CH GUIDE.
The CHANNEL GUIDE menu appears showing channel captions and the corresponding channel number buttons.

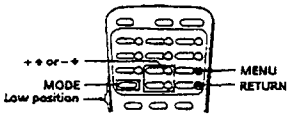


2 Press a channel number button, the DISP or ENT button to select the channel you want.

To cancel the CHANNEL GUIDE menu
Press CH GUIDE again.

Setting video labels (VIDEO LABEL)

This feature allows you to label each input mode so that you can easily identify the connected equipment. For example, you can label VIDEO 1 IN as VHS.



1 Press MENU.

2 Press + ♦ or – ♦ to select SET UP and press RETURN.

3 Press + ♦ or – ♦ to select VIDEO LABEL and press RETURN.

4 Press + ♦ or – ♦ to select the input mode you want to label and press RETURN.

5 **Press + ↑ or – ↓ to select the label and press RETURN.**

Each time you press + ↑ or – ↓, the label changes as shown below.

VIDEO 1
VIDEO 1 ⟷ S VIDEO ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

VIDEO 2
VIDEO 2 ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

VIDEO 3
VIDEO 3 ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

6 **Repeat steps 4 and 5 to label other input modes.**

Note

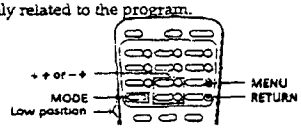
- If more than 90 seconds elapse after you press a button, the menu disappears automatically.

Displaying Caption Vision (CAPTION VISION)

Some source programs are provided with Caption Vision (Closed Caption). To display Caption Vision, select either CC1, CC2, TEXT1, or TEXT2 from the menu.

CC1 or CC2 shows you a caption, that is a printed version of the dialog or sound effects of a program. (The mode should be set to CC1 for most programs.)

TEXT1 or TEXT2 shows you text, that is information presented using half to full of the screen. It is not usually related to the program.



1 **Press MENU.**

2 **Press + ↑ or – ↓ to select CAPTION VISION and press RETURN.**

3 **Press + ↑ or – ↓ to select the caption type and press RETURN.**

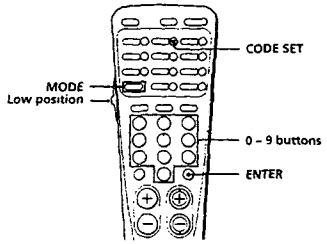
Note

- Captions may appear with a white box or another error instead of a certain word. Poor reception of TV programs can also cause errors in Caption Vision.

Operating video equipment

You can operate Sony or non-Sony video equipment that has an infrared remote sensor with the supplied remote commander. For this operation, set the manufacturer's code number.

Setting the manufacturer's code



While pressing CODE SET, press 0 – 9 to enter the manufacturer's code number (see the chart in the right column). For example, to operate a Sony 8 mm VCR, press 0, 2 and ENTER.

VCR Manufacturer Code numbers

Manufacturer	Code number
SONY	01, 02, 03
CANON	05
EMERSON	22, 30, 33
FISHER	10, 11, 12, 15
FUNAI	29
GENERAL ELECTRIC	05, 08
GOLDSTAR	25
HITACHI	07, 08, 36
JVC	16, 35
MAGNAVOX	05, 06, 09
MITSUBISHI	18, 19, 26, 27
MULTITECH	29
NEC	16, 23, 31
PANASONIC	05, 06
PHILCO	05, 06
PHILIPS	05, 06, 09
QUASAR	05, 06
RCA	07, 08
SAMSUNG	24, 32
SANYO	11, 15
SCOTT	21
SHARP	13, 14
SHINTOM	34
SYLVANIA	05, 06, 09
SYMPHONIC	29
TEKNIKA	28, 29
TOSHIBA	20, 21
TOTE VISION	25
ZENITH	17

MDP manufacturer code numbers

Manufacturer	Code number
SONY	04
KENWOOD	58
MAGNAVOX	52
MARANZ	54
MITSUBISHI	51
PANASONIC	55
PHILIPS	52
PIONEER	51
RCA	51
SANYO	57
SHARP	56
YAMAHA	53

Notes

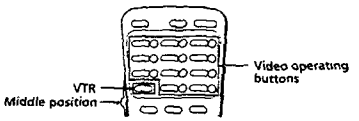
- If more than one code number is listed, try entering them one by one, until you come to the correct code for your equipment.
- In some rare cases, you may not be able to operate your non-Sony video equipment with this remote commander. This is because your equipment may use a code that is not provided with this remote commander. In this case, please use the equipment's own remote control unit.
- The code numbers for Sony equipment are assigned at the factory as follows:

Beta, ED Beta VCRs	01
8 mm VCR	02
VHS VCR	03 (preset code for this remote commander)

Caution

When you remove a battery from the remote commander, the code may revert to 03. Reset the code each time you replace the battery, if necessary.

Operating video equipment



Use the video operating buttons on the remote commander to operate the video equipment.

Operating a VCR	Buttons on the remote commander
To turn on or off	Press POWER
To change channels	Press CH +/–
To record	Press ● and REC simultaneously
To play	Press ▶
To stop	Press ■
To fast forward	Press ▶▶
To rewind the tape	Press ◀◀
To pause	Press ❚❚
To search the picture forward and backward	Press ▶▶ or ◀◀ during playback

Operating the laser-disc player	Buttons on the remote commander
To play	Press ▶
To stop	Press ■
To pause	Press ❚❚ To resume normal playback, press again.
To search the picture forward and backward	Keep pressing ▶▶ or ◀◀ during playback To resume normal playback, release the button.
To search the chapter	Press CH +/–

Note

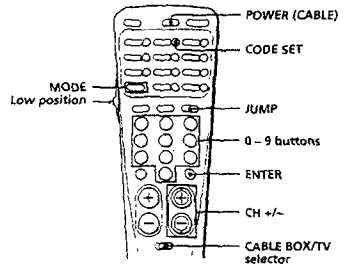
- If the video equipment does not have a certain function, the corresponding button on this remote commander will not operate.

Operating a cable box

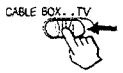
For cable box control (Cable Mouse) users

Set the CABLE BOX/TV selector to TV and disregard the instruction below.

Follow these instructions to set the manufacturer's code which will enable you to operate a connected cable box with the pre-programmed remote commander. For example, you can set the remote commander to operate a connected Zenith cable box.



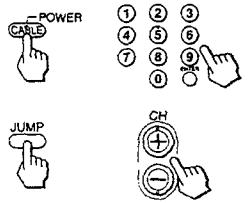
1 Set the CABLE BOX/TV selector to CABLE BOX.



2 While pressing CODE SET, press 6 and 8 (Zenith's code number —see chart on the next page) and ENTER.

(continued)

3 Use POWER(CABLE) and the TV control buttons (0 – 9, ENTER, JUMP and CH +/–) to operate the cable box.



To operate the TV

Set the CABLE BOX/TV selector to TV. Then use the TV control buttons to control the TV.

For more details on operating the cable box

Refer to the operating instructions that come with the cable box.

Manufactures and code numbers (cable box)

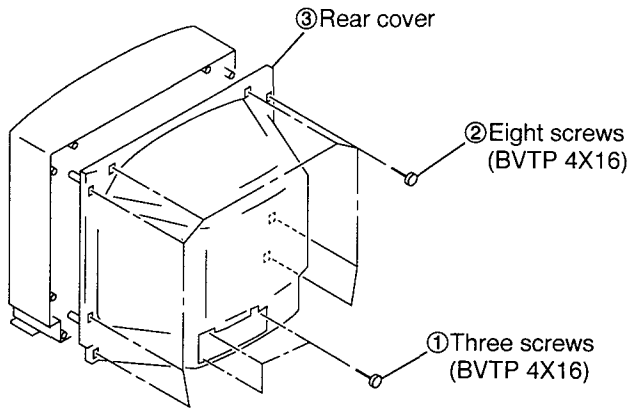
Manufacturer	Code number
JERROLD	60, 61, 62, 63, 64, 65, 73
PIONEER	69, 70
SCIENTIFIC ATLANTA	66, 67
TOCOM	71, 72
ZENITH	68

Notes

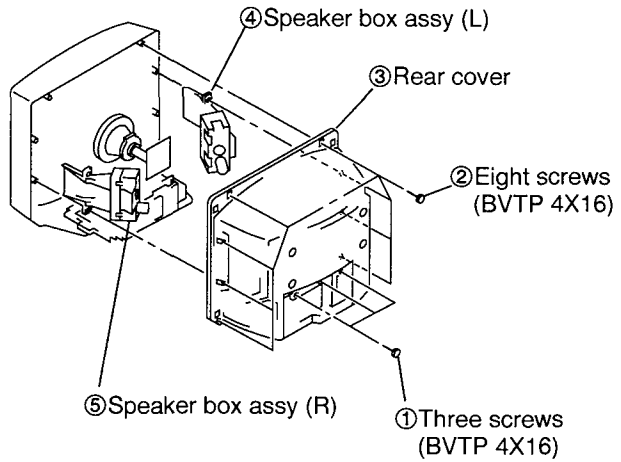
- If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- If you enter a new code number, the code number you previously entered at that setting is erased.
- In some cases, your equipment may use a code that is not provided with this remote commander and you may not be able to operate your cable box with the supplied remote commander. In this case, use the equipment's own remote control unit.
- When you remove a battery from the remote commander, the code may be erased. Reset the code each time you replace the battery, if necessary.

SECTION 2
DISASSEMBLY

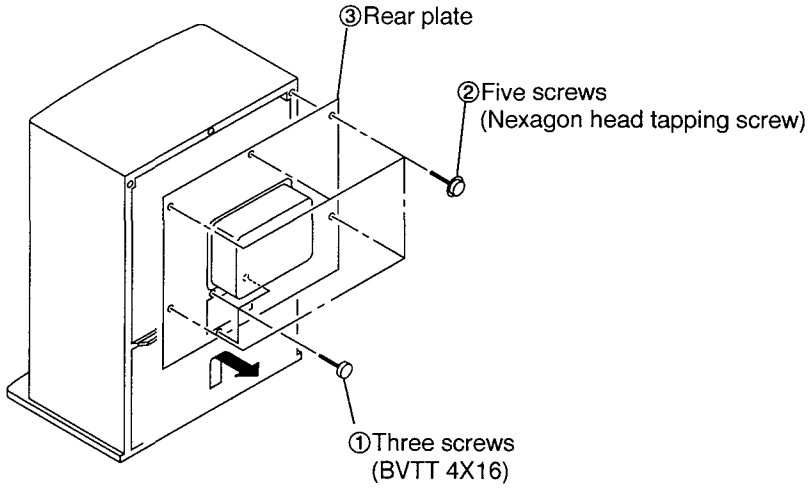
2-1-1. REAR COVER REMOVAL (KV-32S12/32S16)



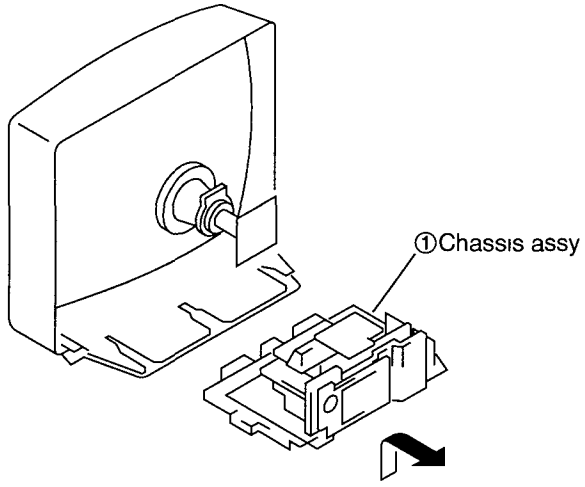
2-1-2. REAR COVER AND SPEAKER BOX ASSY REMOVAL (KV-32V16)



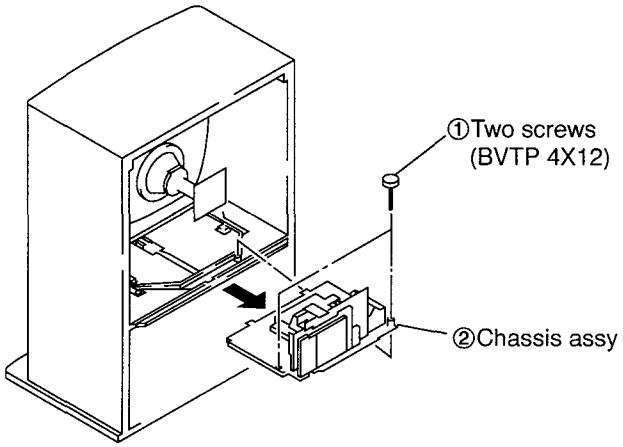
2-1-3. REAR PLATE REMOVAL (KV-32TW67/32TW68)



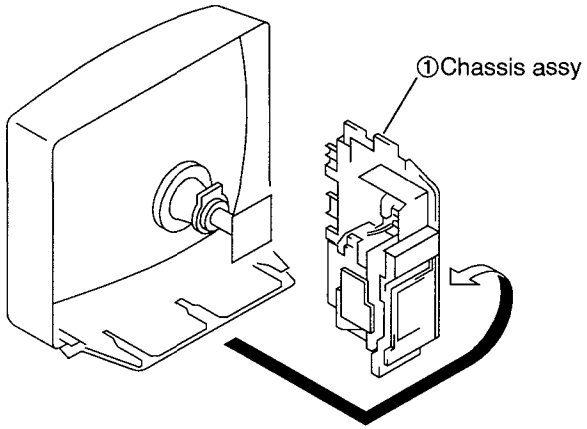
2-2-1. CHASSIS ASSY REMOVAL (KV-32S12/32S16/32V16)



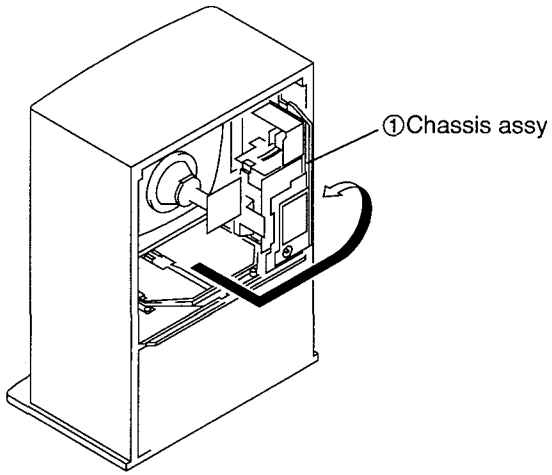
2-2-2. CHASSIS ASSY REMOVAL (KV-32TW67/32TW68)



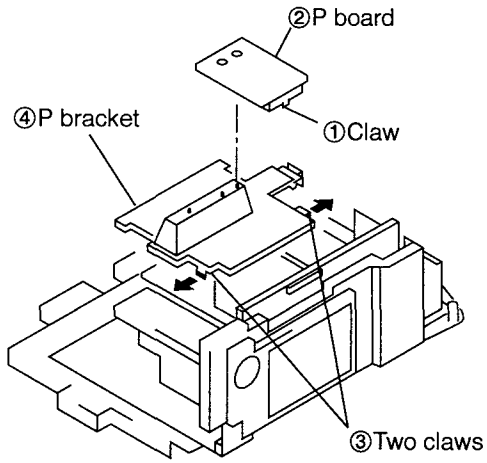
2-3-1. SERVICE POSITION (KV-32S12/32S16/32V16)



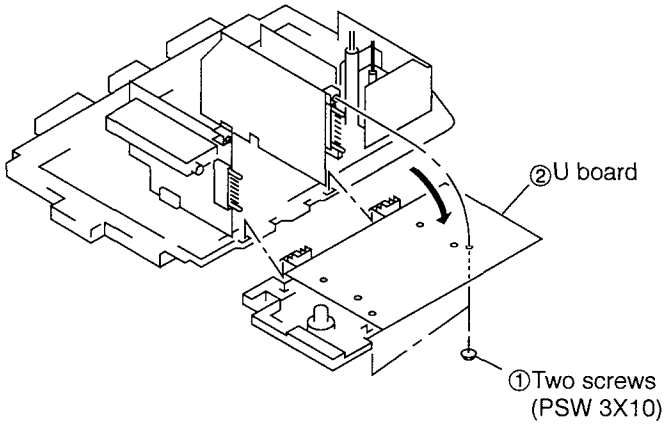
2-3-2. SERVICE POSITION (KV-32TW67/32TW68)



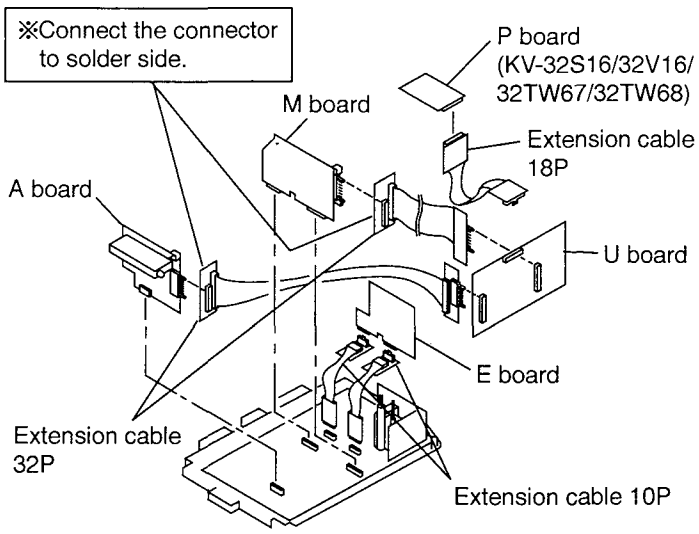
2-4. P BOARD REMOVAL (KV-32S16 U model/32V16/32TW67/32TW68)

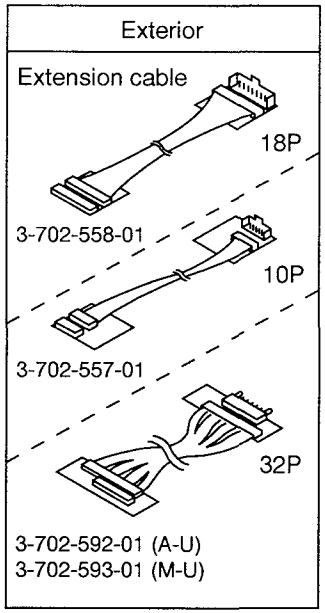


2-5. U BOARD REMOVAL



2-6. EXTENSION CABLE



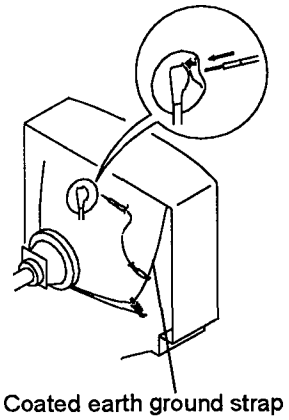


2-7 PICTURE TUBE REMOVAL

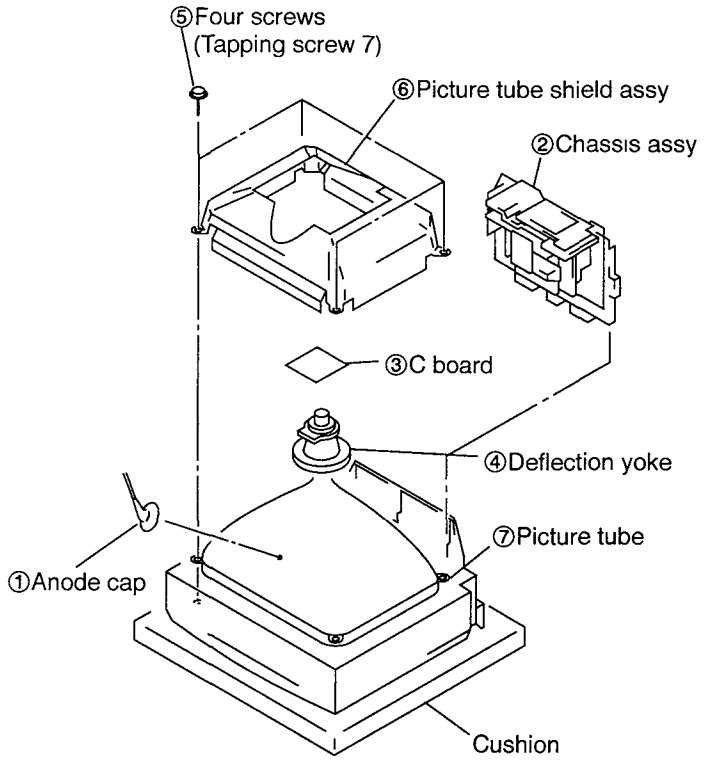
WARNING : Before removing anode cap

H. V. remains in the CRT even after the power is disconnected.

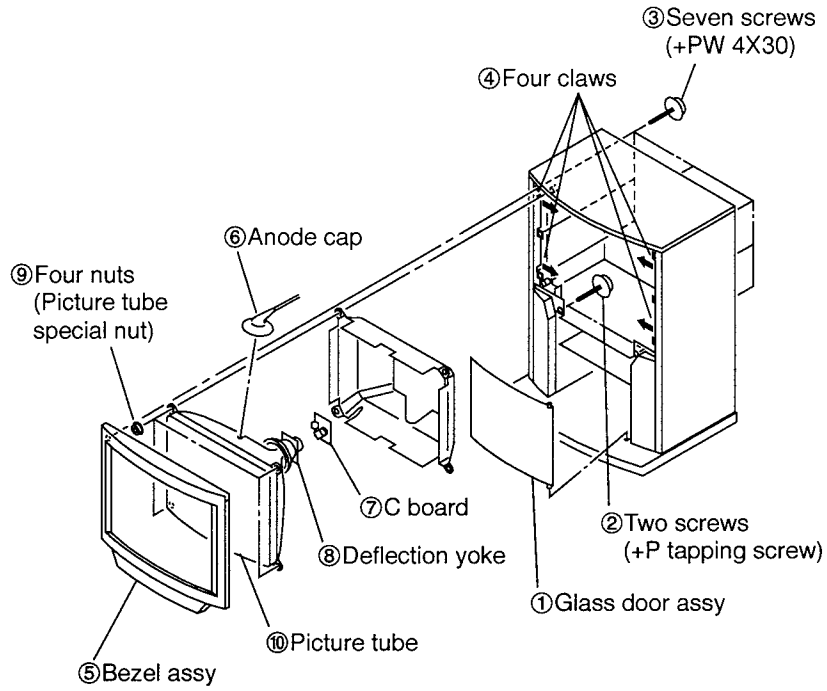
To avoid electrical shock, before attempting to remove the anode cap, discharge CRT : Short between anode and CRT coated earth ground strap.



(1) KV-32S12/32S16/32V16



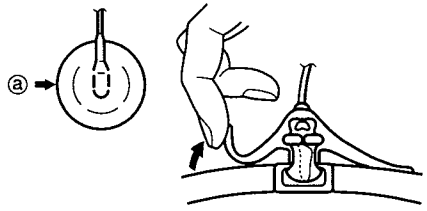
(2) KV-32TW67/32TW68



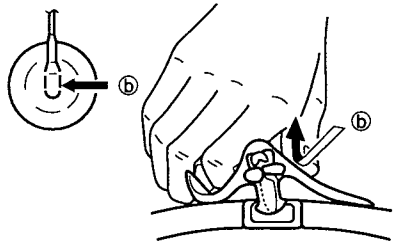
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis. CRT chield or carbon painted on the CRT, after removing the anode.

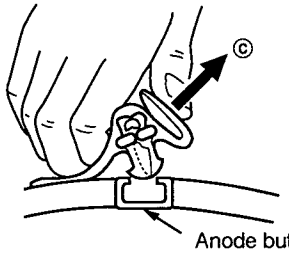
•REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



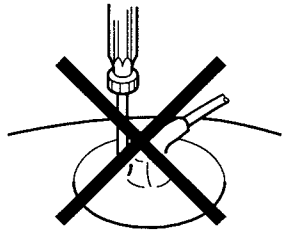
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be romoved by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

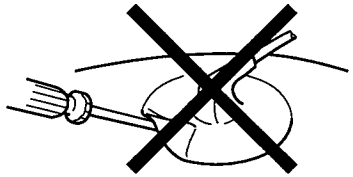
•HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

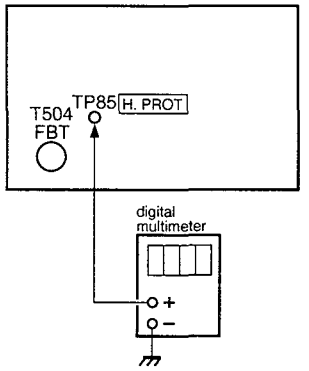
② Don't press the rubber hardly not to hurt inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or hurt the rubber.

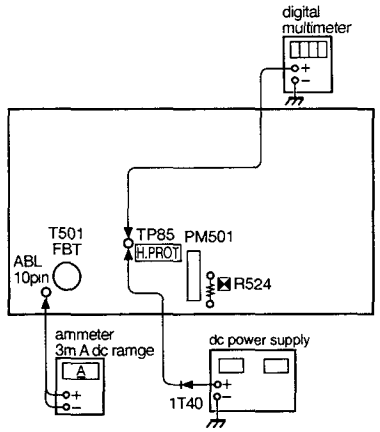


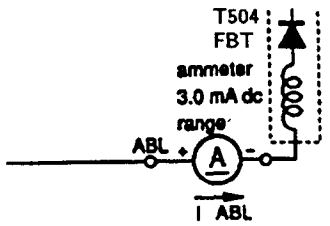
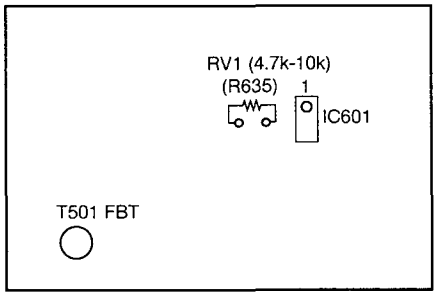


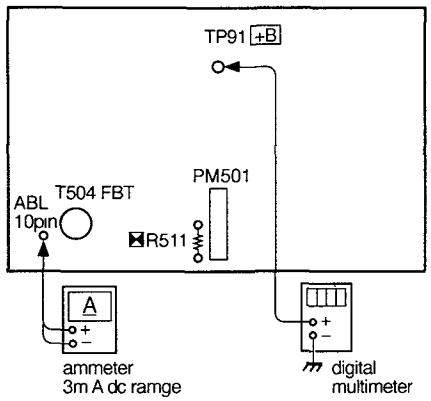
SECTION 3
SAFETY RELATED ADJUSTMENTS

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
D BOARD **⧓ *RESISTOR CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS**			*⧓ R524	
The following adjustments should always be performed when replacing the following components (*marked with ◪ on the schematic diagram).		*◪ marked parts IC601, PM501, D504, C598, R338, R509, R524, R632, R635, R645, T501		
1. Preparation before confirmation 1) Turn the POWER switch ON, and receive *signal and set the *PICTURE and BRIGHTNESS controls to adjustment.	*Entirely white		*PICTURE BRIGHTNESS ..... maximum	
2) Confirm that the voltage of the check terminal of *TP is more than *voltage when the set is operating normaly with *Power supply.	*Digital multimeter	*TP85 (H. PROT)		*122.3V DC..... 32 inch only *120 ± 2.0 VAC (Power Supply) D BOARD - CONDUCTOR SIDE - 

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
2. Hold-down operation confirmation (HV) 1) Connect the *currentmeter between the *pin of *FBT and the land of it with connect polarity.	*Currentmeter	*FBT (T501) Pin ⑩		
2) Receive *Signal and adjust the *ABL current to follows with the PICTURE and the BRIGHTNESS controls.	*Entirely white			*1760 ± 50μA
3) Connect the Digital Voltmeter and *DC power Supply via *DIODE to TP.	*DC Power Supply	*Via 1T40 to TP-85		
4) Increase the DC power voltage gradually until the Picture just blanks out.				
5) Read the digital voltmeter indication.				
6) Turn DC power Source off immediately. *STANDARD				*Less than 143.5 VDC
7) Receive *Signal and adjust the *ABL current to follows, with the PICTURE and the BRIGHTNESS controls.	*Dot Signal			*160 ± 50μA
8) Repeat steps from (3) to (7). *STANDARD				*Less than 144.1 VDC

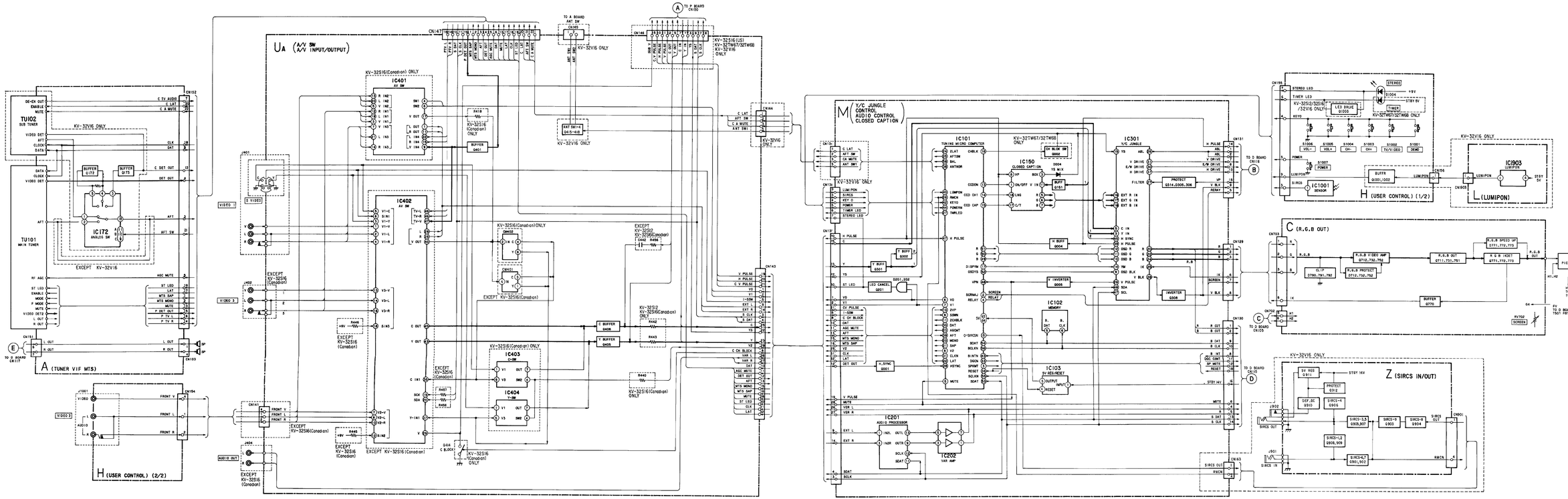


ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
3. Hold -down readjustment When step 2 is not satisfied, readjustment should be performed by altering the resistance value of *Resistor (a component marked with ⊠).			*⊠ R524	
⊠ *RESISTOR CONFIRMATION METHOD (B+ HOLD-DOWN CONFIRMATION) AND READJUSTMENTS			*⊠R511	
The following adjustments should always be performed when replacing the following components (*marked with ◪ on the schematic diagram).		*◪ marked parts PM501, R338, R511, R632, R645, R650		
1.Preparation before confirmation 1) Remove the *resistor on the D board and connect a *variable risistor between pin① of IC601 and B+ line. 2) Supply *AC voltage to with *variable auto-transformer.	*Variable auto-transformer.			*R635 *RV1 : about 4.7 kΩ - 10kΩ *120 ± 2.0 VAC 

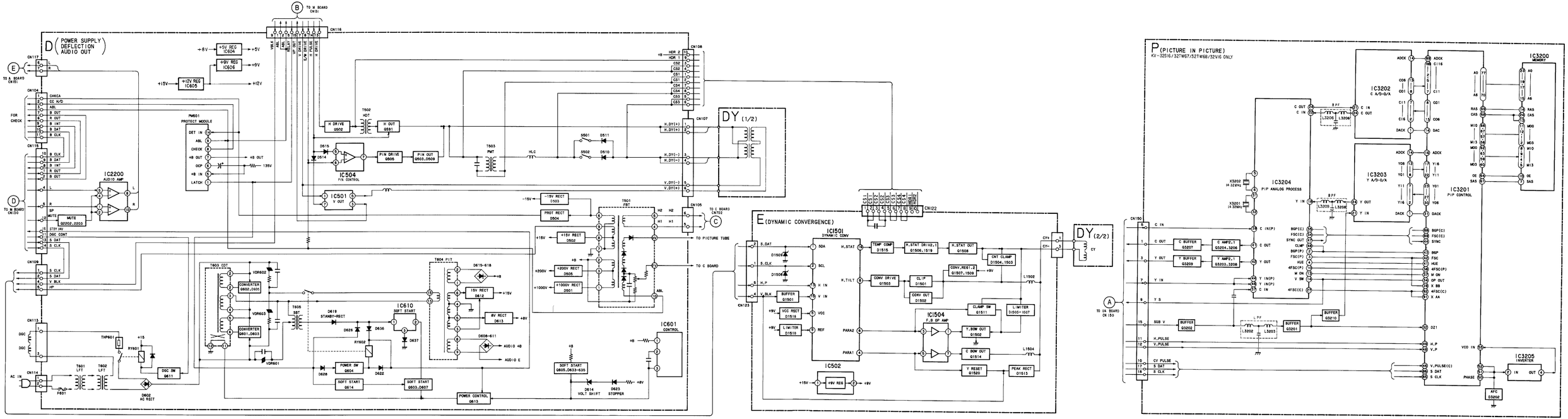
ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
2.Hold-down operation voltage (B+) 1) Connect the *currentmeter between the *pin of FBT and the land of it with correct polarity. 2) Receive *Signal and adjust the *ABL current to follows with the PICTURE and the BRIGHTNESS controls.	*Currentmeter *Entirely white	*FBT (T501) Pin ⑩		*1760 ± 50μA
3) Connect the *Digital Multimeter to *TP. 4) Increase the DC power voltage gradually by adjusting the resister of RV1 until the Picture just blanks out. 5) Read the digital voltmeter indication. 6) Turn DC power Source off immediately. *STANDARD	*Digital Multimeter	*TP91 (+B)		*Less than 140.0 VDC
7) Receive *Signal and adjust the *ABL current to follows, with the PICTURE and the BRIGHTNESS controls.	*Dot signal			*160 ± 50μA
8) Repeat steps from 4) to 6). *STANDARD				*Less than 143.5 VDC
3. Hold-down readjustment When step 1 is not satisfied, readjustment should be performed by altering the resistance value of *resistor (a component marked with ⋈) .		*⋈R511		

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
B+ VOLTAGE CONFIRMATION The following adjustments should always be performed when replacing the following *components.		*IC601, R635		
1) Supply *Voltage AC to with *variable auto-transformer.	*Variable auto-transformer			*120 $^{+2.0}_{-0}$ V AC
2) Input an entirely *signal.	*Monoscope			
3) Set the PICTURE control and the BRIGHTNESS control to adjustment.			*PICTURE, BRIGHTNESS ..... initial reset	
4) Confirm the voltage of *TP is less than *Voltage DC.		*TP91 (+B)		*Less than 137.0 VDC
5) If step 4) is not satisfied, replace the *components repeat above steps.			*IC602, R635	

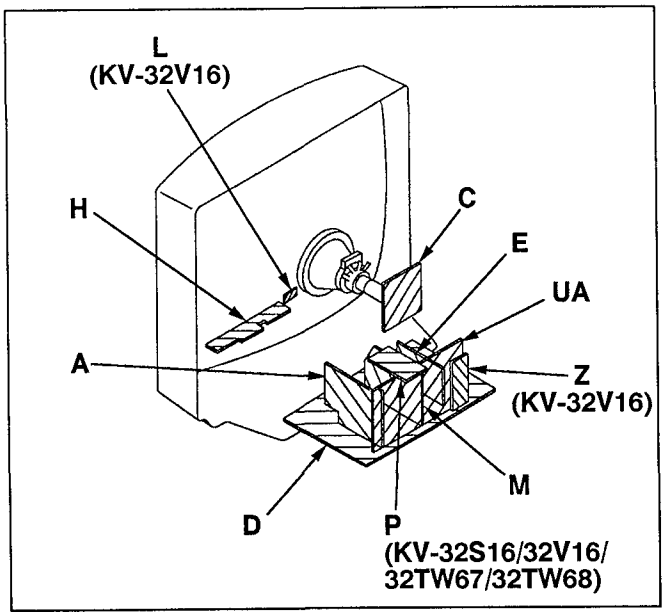
4-1. BLOCK DIAGRAMS (1)



4-2. BLOCK DIAGRAMS (2)



4-3. CIRCUIT BOARDS LOCATION



4-4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note :

- All capacitors are in µF unless noted. pF : µµF 50V or less are not indicated except for electrolytics and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms.
  kΩ = 1000 Ω, MΩ = 1000kΩ
- Indication of resistance, which dose not have one for rating electrical power, is as follows.

Pitch : 5mm Rating electrical power : ¼W

- ⊠ : nonflammable resistor.
- ⊠ : fusible resistor.
- △ : internal component.
- □ : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⊠ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⊠ and repeat the adjustment until the specified value is achieved.
  (Refer to R511 and R524 adjustment on Page 20, 25.)
- When replacing the part in below table, be sure to perform the related adjustment.

Part replaced (◪)		Adjustment (⊠)
PM501, R511, R632, R645, R650	D BOARD	HOLD-DOWN (R511)
R338	M BOARD	
IC601, PM501, D504, C598, R509, R524, R632, R635, R645, T501	D BOARD	HOLD-DOWN (R524)
R338	M BOARD	

- As to the voltage volue shown by the semiconductors on the Schematic Diagram, see the another list.
- Readings are taken with a color-bar signal input.
- Readings are taken with a 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
  * : Measurement impossibillity.
- ⊡V : B + line
- ⊡V : B − line
  (Actual measured value may be different)
- ➡ : signal path.(RF)
- Circled numbers are waveform references.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The symbol ⊠ display is on the component side.

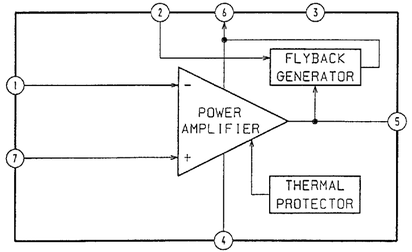
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

The symbol ⊠ indicate fast operating fuse. Replace only with fuse of same rating as maked.

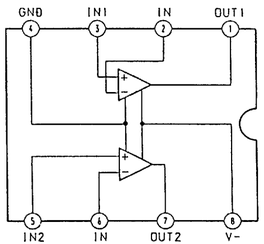
Note: Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Le symbole ⊠ indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme maque.

D BOARD IC501 TDA8172

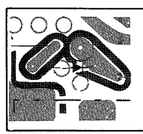


D BOARD IC504 μPC393C



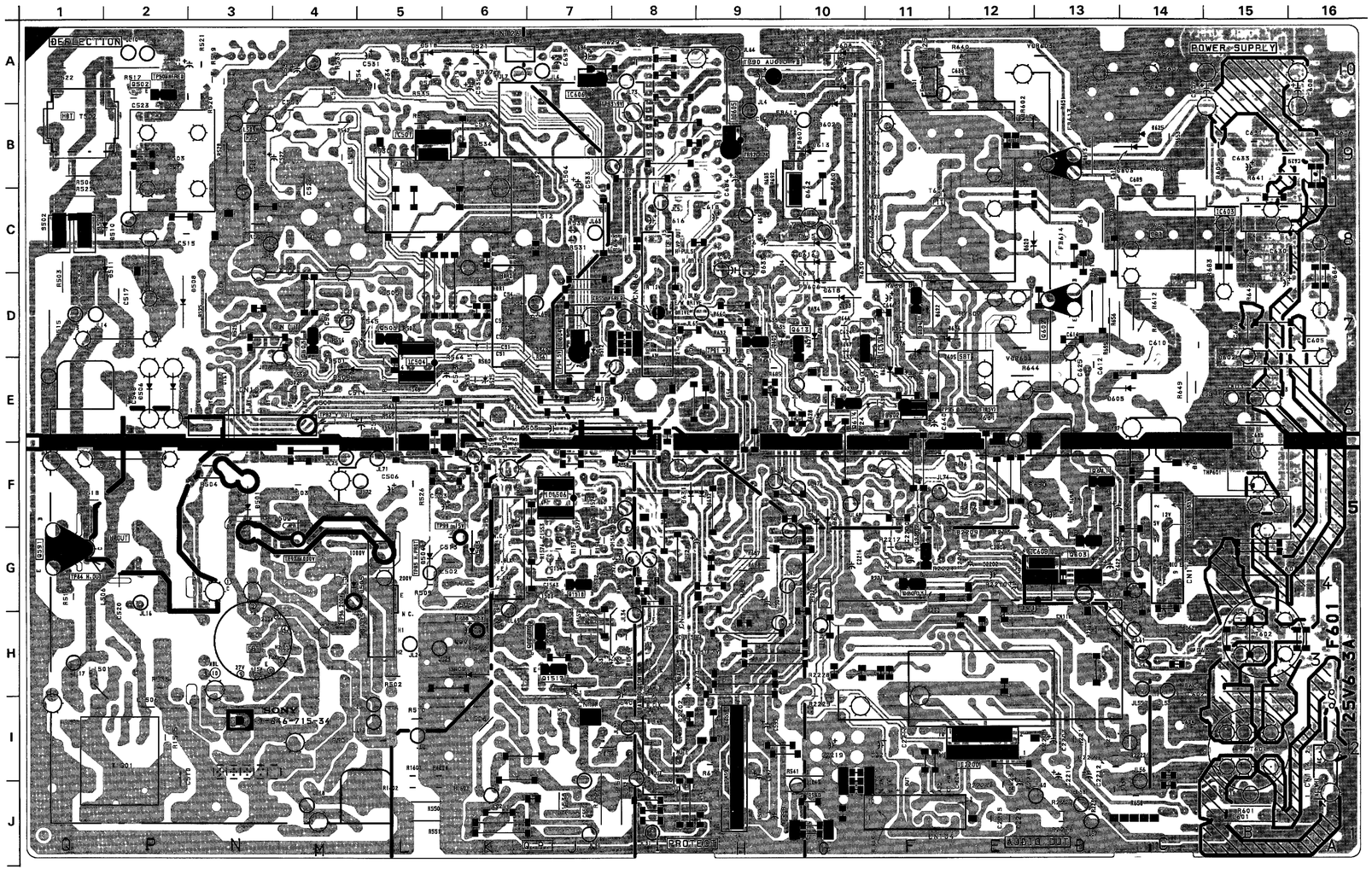
D BOARD

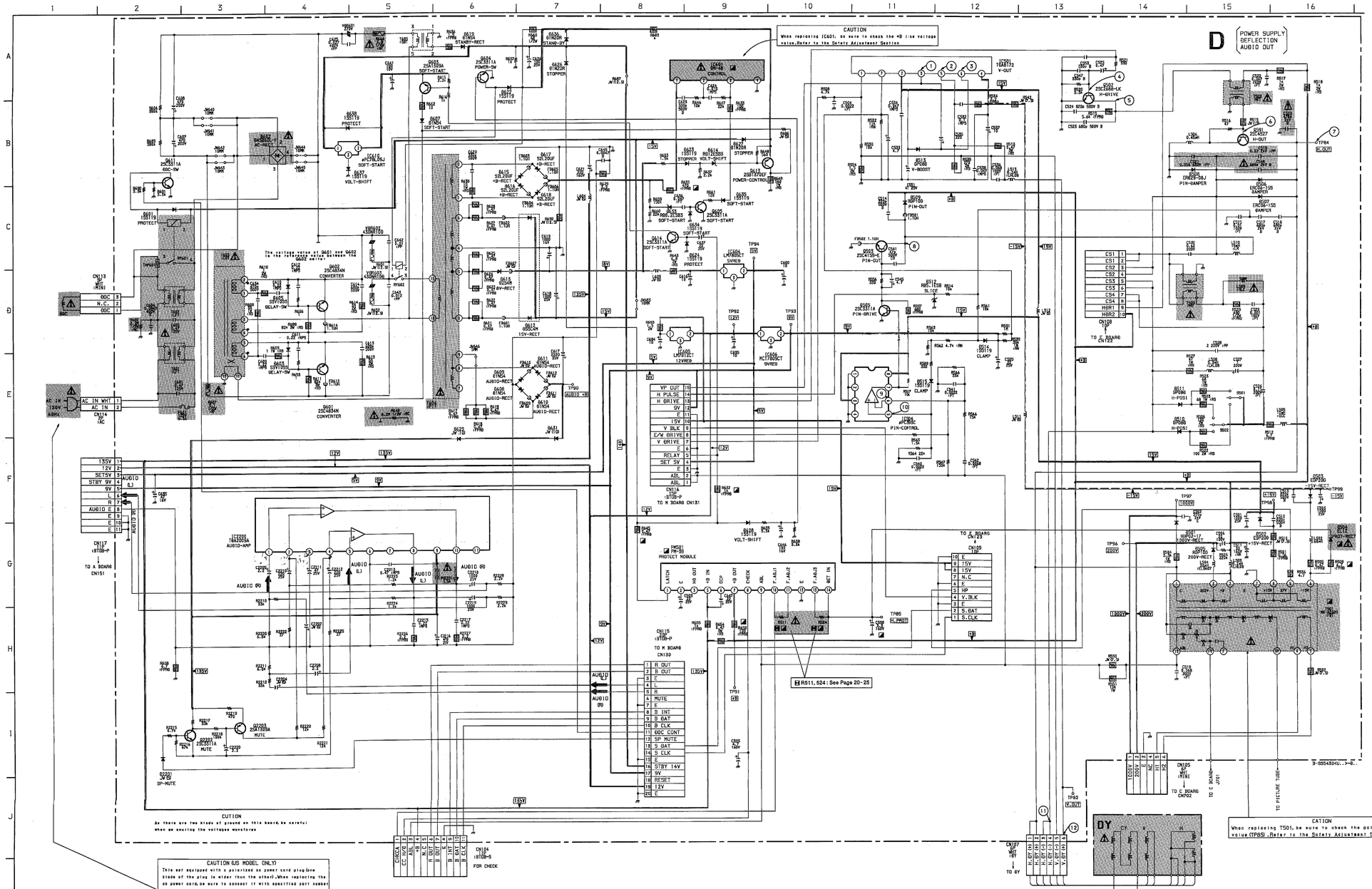
IC	
IC501	B – 5
IC504	D – 5
IC601	D – 10
IC604	D – 7
IC605	B – 9
IC606	A – 7
IC610	G – 12
IC2200	I – 12
TRANSISTOR	
Q502	A – 2
Q503	D – 4
Q505	D – 5
D591	G – 1
Q601	B – 13
Q602	D – 13
Q603	G – 13
Q604	D – 11
Q605	D – 9
Q611	F – 13
Q613	D – 10
Q614	E – 10
Q2202	G – 11
Q2203	G – 11
DIODE	
D501	F – 3
D502	H – 6
D503	G – 6
D604	G – 5
D505	G – 4
D506	E – 2
D507	E – 2
D508	D – 2
D509	E – 4
D510	C – 1
D511	C – 1
D512	D – 7
D513	A – 5
D514	E – 6
D515	D – 6
D601	F – 14
D602	D – 15
D603	B – 14
D605	E – 13
D607	G – 12
D608	A – 10
D609	A – 10
D610	A – 10
D611	A – 10
D612	B – 10
D613	B – 10
D614	E – 10
D615	C – 10
D616	C – 10
D617	C – 10
D618	D – 10
D619	D – 11
D622	D – 11
D623	E – 10
D624	E – 10
D626	E – 11
D627	D – 10
D628	E – 10
D633	C – 9
D634	C – 9
D635	D – 9
D636	D – 11
D637	G – 13
D638	F – 12



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

– D BOARD –




D
POWER SUPPLY
DEFLECTION
AUDIO OUT
CAUTION
When replacing IC601, be sure to check the +B line voltage value.Refer to the Safety Adjustment Section.
CAUTION
As there are two kinds of ground on this board,be careful when measuring the voltages waveforms
CAUTION (US MODEL ONLY)
This set equipped with a polarized ac power cord plug.One blade of the plug is wider than the other.When replacing the ac power cord,be sure to connect it with specified part number as shown in this diagram
CAUTION
When replacing TS01, be sure to check the point voltage value(TP85).Refer to the Safety Adjustment Section.
TO E BOARD DY-2
TO A BOARD CN151
TO W BOARD CN130
TO F BOARD CN122
TO C BOARD CN702
TO PICTURE TUBE
TO DY
FOR CHECK
R511, 524 : See Page 20-25

D BOARD TRANSISTOR VOLTAGE LIST

Ref	Location	B	C	E
Q502	B - 13	- 1.2	106.1	0
Q503	D - 11	0.3	17.3	0
Q505	D - 11	0.1	2.7	0
Q591	B - 15	- 0.3	139.7	0.1
Q601	E - 4	164.0	319.0	164.0
Q602	D - 4	- 0.2	164.0	0
Q603	B - 5	5.9	- 7.0	5.9
Q504	B - 6	0.7	0	0.2
Q505	C - 9	0.2	15.1	0
Q611	C - 2	0	0	0
Q613	C - 9	15.4	5.0	16.0
Q614	C - 8	0	5.9	0
Q2202	I - 2	0.7	0	0
Q2203	I - 3	19.7	20.4	20.4

All voltages are in V

D BOARD IC VOLTAGE LIST

IC501 ①	2.1	IC610 ①	16.0
B - 11 ②	- 13.8	B - 4 ②	5.9
③	- 13.8	③	0.7
④	- 16.0		
⑤	- 0.1	IC2200 ①	1.5
⑥	13.2	G - 4 ②	3.0
⑦	2.1	③	12.0
		④	3.0
IC504 ①	0	⑤	1.8
F - 11 ②	0	⑥	0
③	15.0	⑦	—
④	0	⑧	0.2
⑤	2.2	⑨	21.0
⑥	3.8	⑩	0.2
⑦	0.1	⑪	—
⑧	15.0		
		PM501 ①	4.1
IC501 ①	138.1	H - 9 ②	0.1
B - 9 ②	2.5	③	—
③	15.2	④	—
④	0	⑤	139.1
		⑥	137.4
IC504 ①	8.0	⑦	138.1
D - 9 ②	5.0	⑧	137.4
③	0	⑨	3.2
		⑩	121.1
IC805 ①	15.0	⑪	4.1
E - 8 ②	12.0	⑫	0
③	0	⑬	127.0
		⑭	132.8
IC806 ①	12.0		
E - 9 ②	9.0		
③	0		

All voltages are in V
— : BLANK PIN

D BOARD ✻ MARK

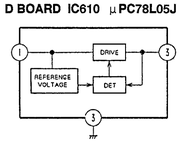
Ref. No.	Location	KV-32S12/S16 /TW67/TW68	KV-32V16
R589	A - 8	JW (7.5)	47/1W

○:TO BE MOUNT
—:NOT MOUNT

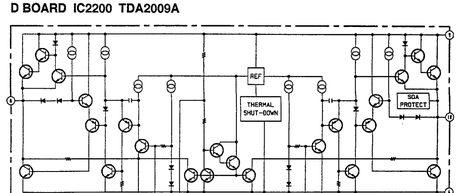
• D BOARD WAVEFORMS

① 30 Vp-p (V)	② 60 Vp-p (V)	③ 32 Vp-p (V)
④ 3.5 Vp-p (H)	⑤ 185 Vp-p (H)	⑥ 19 Vp-p (H)
⑦ 1000 Vp-p (H)	⑧ 140 Vp-p (H)	⑨ 2.4 Vp-p (V)
⑩ 3.6 Vp-p (H)	⑪ 230 Vp-p (H)	⑫ 2.8 Vp-p (V)

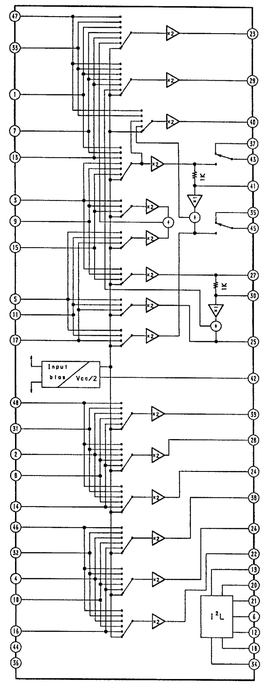
D BOARD IC610 μPC78L05J



D BOARD IC2200 TDA2009A



UA BOARD IC402 CXA1545AS



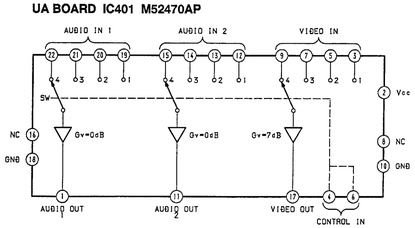
UA BOARD ✻ MARK

Ref No	Location	KV-32S12	KV-32S16 (US)	KV-32S16 (CND)	KV-32W67/ 32TW68	KV-32V16
C406	F-5	1	1	–	1	1
C407	F-6	1	1	–	1	1
C408	F-5	22/25V	22/25V	–	22/25V	22/25V
C411	D-6	–	–	100/25V	–	–
C417	I-10	0.47	0.47	–	0.47	0.47
C418	I-10	0.47	0.47	–	0.47	0.47
C427	B-5	JW (5.0)	JW (5.0)	–	JW (5.0)	JW (5.0)
C430	F-8	–	–	–	–	1
C431	F-8	–	–	–	–	1
C432	G-7	–	–	–	–	22/25V
C433	F-8	32/25V	33/25V	–	33/25V	33/25V
C434	F-8	100P	100P	–	100P	100P
C440	F-9	–	–	–	10	–
C442	C-6	–	100P	–	100P	100P
C461	B-5	JW (5.0)	JW (5.0)	–	JW (5.0)	JW (5.0)
C462	E-8	100/16V	100/16V	–	100/16V	100/16V
C471	F-10	22/25V	22/25V	0.47	22/25V	22/25V
CN401	D-10	○	○	○	–	○
CN402	D-10	–	–	–	○	–
CN141	A-4	5P	5P	–	5P	5P
CN142	C-14	2P	2P	–	–	2P
CN144	G-14	–	–	–	–	6P
CN145	A-7	–	18P	–	18P	18P
CN148	A-5	2P	2P	–	2P	2P
CN149	J-11	–	–	–	–	4P
D401	E-5	RD10ESB	RD10ESB	MTZJ-T-77-10B	MTZJ-T-77-10B	MTZJ-T-77-10B
D403	E-8	RD10ESB	RD10ESB	–	MTZJ-T-77-10B	MTZJ-T-77-10B
D404	D-8	RD10ESB	RD10ESB	–	MTZJ-T-77-10B	MTZJ-T-77-10B
D405	F-5	RD10ESB	RD10ESB	–	MTZJ-T-77-10B	MTZJ-T-77-10B
D408	E-5	RD10ESB	RD10ESB	MTZJ-T 77 10B	MTZJ-T 77 10B	MTZJ-T-77-10B
D409	E-5	RD10ESB	RD10ESB	MTZJ-T-77-10B	–	MTZJ-T-77-10B
D429	D-8	RD10ESB	RD10ESB	–	MTZJ-T-77-10B	MTZJ-T-77-10B
D430	E-8	RD10ESB	RD10ESB	–	MTZJ-T-77-10B	MTZJ-T-77-10B
D431	D-6	RD10ESB	RD10ESB	–	MTZJ-T-77-10B	MTZJ-T-77-10B
D436	G-7	RD10ESB	RD10ESB	–	MTZJ-T-77-10B	MTZJ-T-77-10B
D437	G-7	RD10ESB	RD10ESB	–	MTZJ-T-77-10B	MTZJ-T-77-10B
IC401	G-7			M52470AP		
IC402	F-7	CXA1545AS	CXA1545AS	–	CXA1545AS	CXA1545AS
IC403	G-10	–	–	MM1114XFF	–	–
IC404	F-10	–	–	MM1118XFF	–	–
J402	F-2	3P	3P	–	3P	3P
J404	I-2	2P	2P	–	2P	2P
JR419	F-5	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	–	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)
JR498		CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	–	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)
JR901	E-5	–	–	–	CONDUCTOR CHIP (2012)	–
JW454	C-8	–	–	10K	–	–
JW456	C-7	–	–	10K	–	–
L401	F-8	18μH	18μH	–	18μH	18μH
L403	C-6	–	33μH	–	33μH	33μH
L404	B-7	–	33μH	–	33μH	33μH
L405	E-8	JW (5.0)	JW (5.0)	–	JW (5.0)	JW (5.0)
L452	H-11	–	–	–	–	JW (5.0)
L453	H-11	–	–	–	–	JW (5.0)

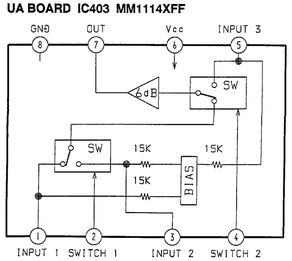
Ref No	Location	KV-32S12	KV-32S16 (US)	KV-32S16 (CND)	KV-32W67/ 32TW68	KV-32V16
Q410	F-6	–	–	–	–	2SD601A
Q414	F-9	–	–	–	2SD601A	
Q415	H-10	–	–	–	–	2SD601A
Q416	G-10	–	–	–	–	2SB709A
Q417	H-10	–	–	–	–	2SB709A
Q418	H-11	–	–	–	–	2SB709A
R405	I-10	470K	470K	–	470K	470K
R406	I-10	470K	470K	–	470K	470K
R408	G-4	470K	470K	–	470K	470K
R409	G-4	470K	470K	–	470K	470K
R410	F-5	4.7K	4.7K	–	4.7K	4.7K
R411	F-5	4.7K	4.7K	–	4.7K	4.7K
R414	G-5	75	75	–	75	75
R418	D-8	–	–	100	–	–
R420	C-5	JW (5.0)	JW (5.0)	–	JW (5.0)	JW (5.0)
R422	C-5	JW (5.0)	JW (5.0)	–	JW (5.0)	JW (5.0)
R431	I-10	1K	1K	680	1K	1K
R432	I-10	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	680	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)
R434	I-10	1K	1K	680	1K	1K
R435	I-10	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	680	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)
R440	J-11	–	–	100	–	–
R442	J-11	100	–	100	–	–
R443	J-11	100	–	100	–	–
R445	F-6	10K	10K	–	10K	10K
R446	F-6	10K	10K	–	10K	10K
R450	D-11	470	470	100	470	470
R451	E-8	4.7K	4.7K	–	4.7K	4.7K
R452	F-8	–	–	–	–	100
R453	D-11	560	560	1.2K	560	560
R454	D-11	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	100	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)
R455	C-7	–	–	470	–	470
R457	F-7	220	220	–	220	220
R458	F-7	220	220	–	220	220
R459	H-9	–	–	–	–	22K
R460	H-10	–	–	–	–	330
R461	F-8	–	–	–	–	4.7K
R462	F-8	–	–	–	–	4.7K
R463	G-6	–	–	–	–	680
R464	G-6	–	–	–	–	680
R475	F-9	–	–	–	1K	–
R476	H-9	–	–	–	–	22K
R478	C-6	–	470	–	470	470
R479	G-10	–	–	–	–	22K
R480	H-10	–	–	–	–	22K
R481	H-10	–	–	–	–	22K
R482	I-10	1K	1K	–	1K	1K
R483	I-10	1K	1K	–	1K	1K
R488	H-11	–	–	–	–	22K
R489	H-10	–	–	–	–	22K
R490	F-5	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	–	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)
R491	F-4	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	–	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)
R492	F-4	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	–	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)
R1438	C-7	–	22K	–	22K	22K

○ TO BE MOUNT
– NOT MOUNT

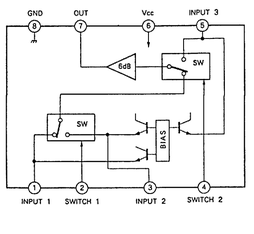
UA BOARD IC401 M52470AP



UA BOARD IC403 MM1114XFF



UA BOARD IC404 MM1118XFF



UA BOARD IC VOLTAGE LIST

All voltages are in V

IC401	48	IC402	47		—	IC403	47
D-7	12.0	F-8	48		48	F-10	0
	4.7		4.7		—		—
	4.3		4.8		4.8		5.1
	4.7		4.7		4.7		4.8
	5.0		5.2		—		9.0
	4.7		4.7		4.8		4.6
	0		4.8		4.8		0
	4.7		—		4.7		
	0		4.8		—	IC404	4.7
	4.8		—		4.8	E-10	0
	4.8		8.4		0		—
	4.8		4.7		4.8		5.1
	4.8		4.8		—		4.8
	4.8		—		—		9.0
	0		4.8		4.7		4.6
	4.7		—		4.7		0
	0		8.4		4.8		
	4.8		5.1		4.4		
	4.8		5.1		9.0		
	4.8		—		4.6		
	4.8		—		4.8		
			—		4.7		
			—		4.8		

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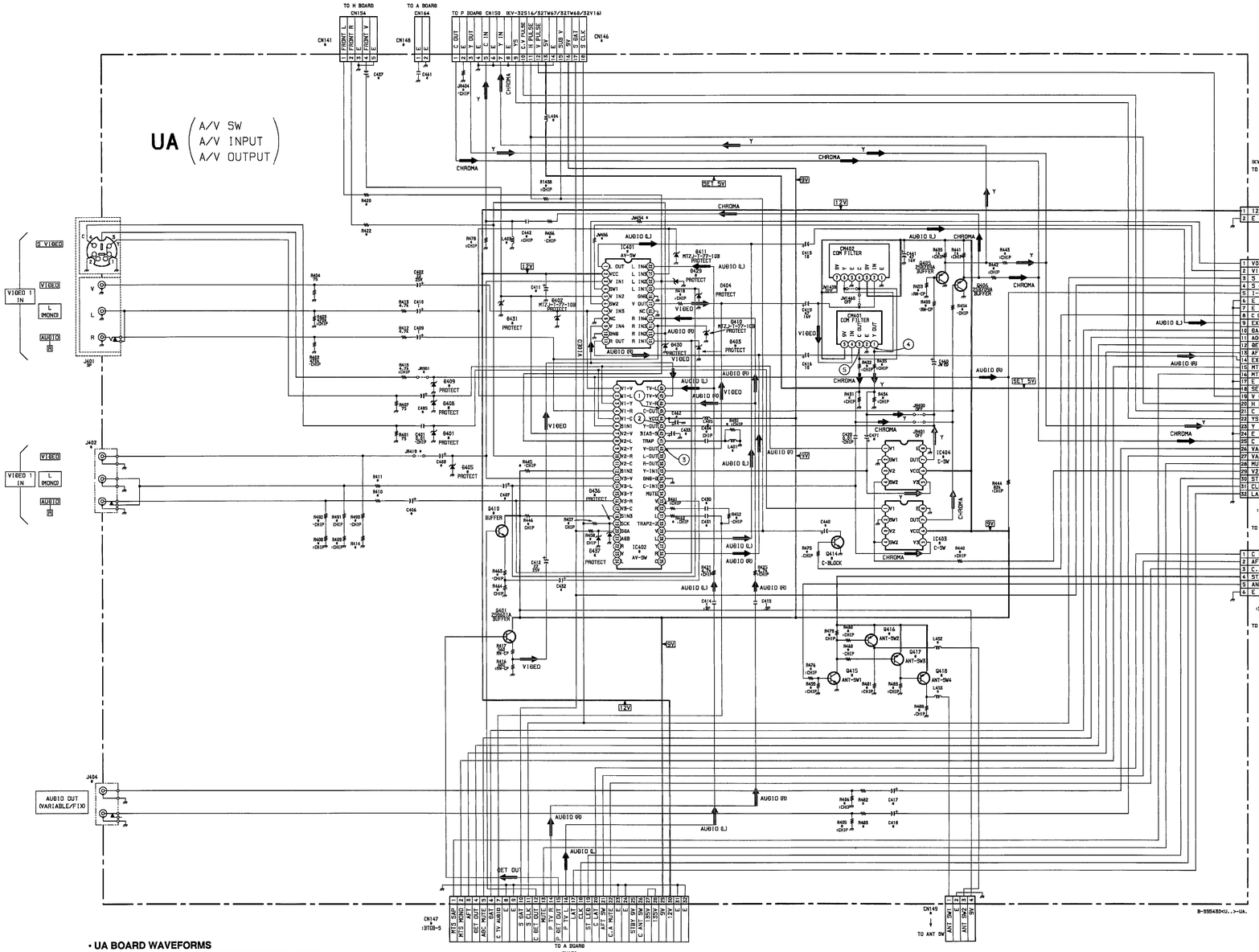
UA BOARD TRANSISTOR VOLTAGE LIST

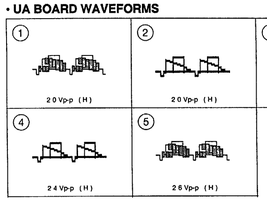
Ref	Location	B	C	E
Q401	H-6	4.8	9.0	4.2
Q405	D-11	2.4	0	3.1
Q406	D-11	4.6	0	5.3
Q410	G-6	5.8	9.0	5.1
Q414	G-10	0	4.7	0
Q415	H-10	0.8	0.1	0
Q416	H-10	4.5	4.7	5.0
Q417	H-10	4.3	5.1	5.0
Q418	H-11	5.1	0	5.0

All voltages are in V

UA (A/V SW / A/V INPUT / A/V OUTPUT)

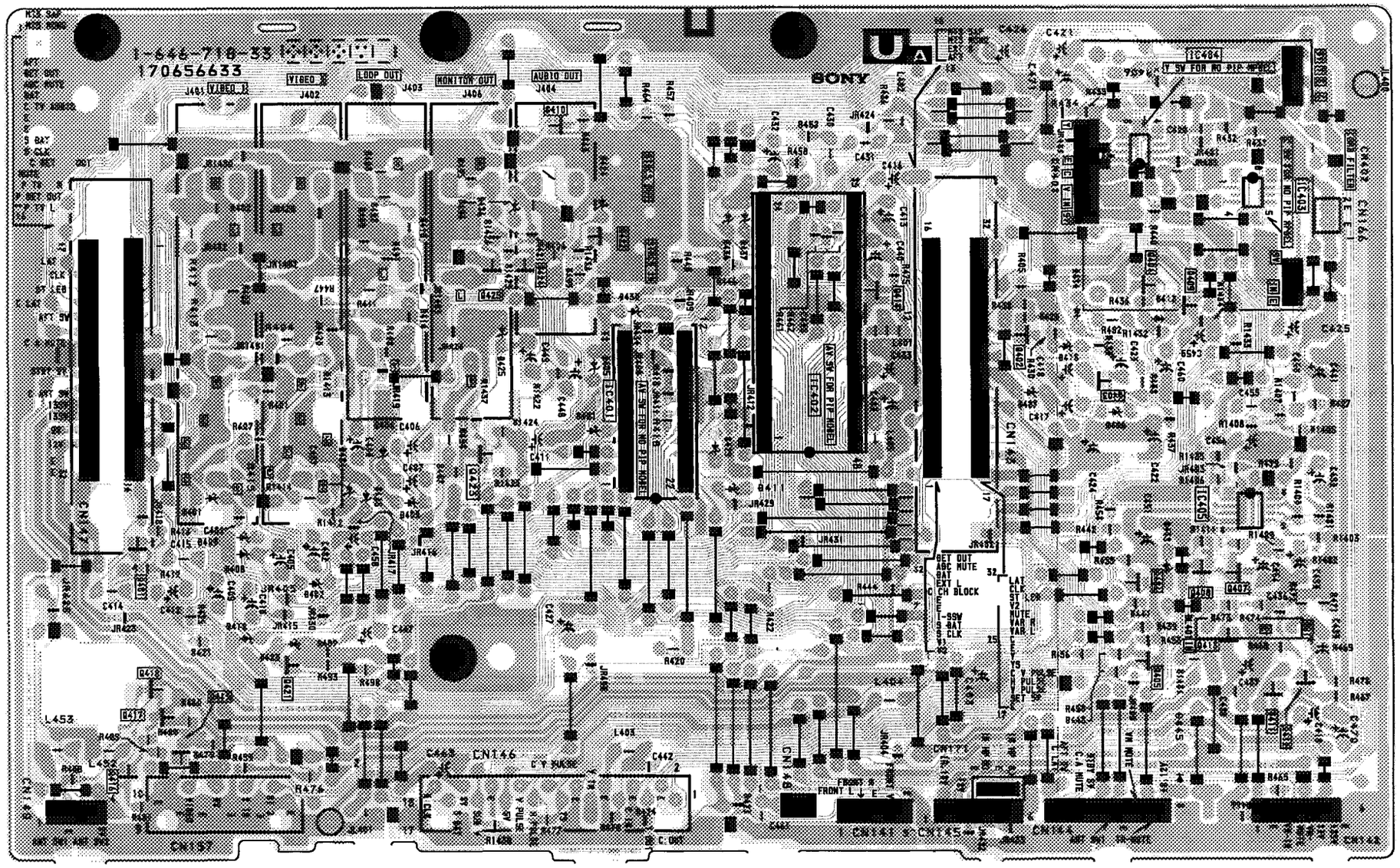


• UA BOARD WAVEFORMS

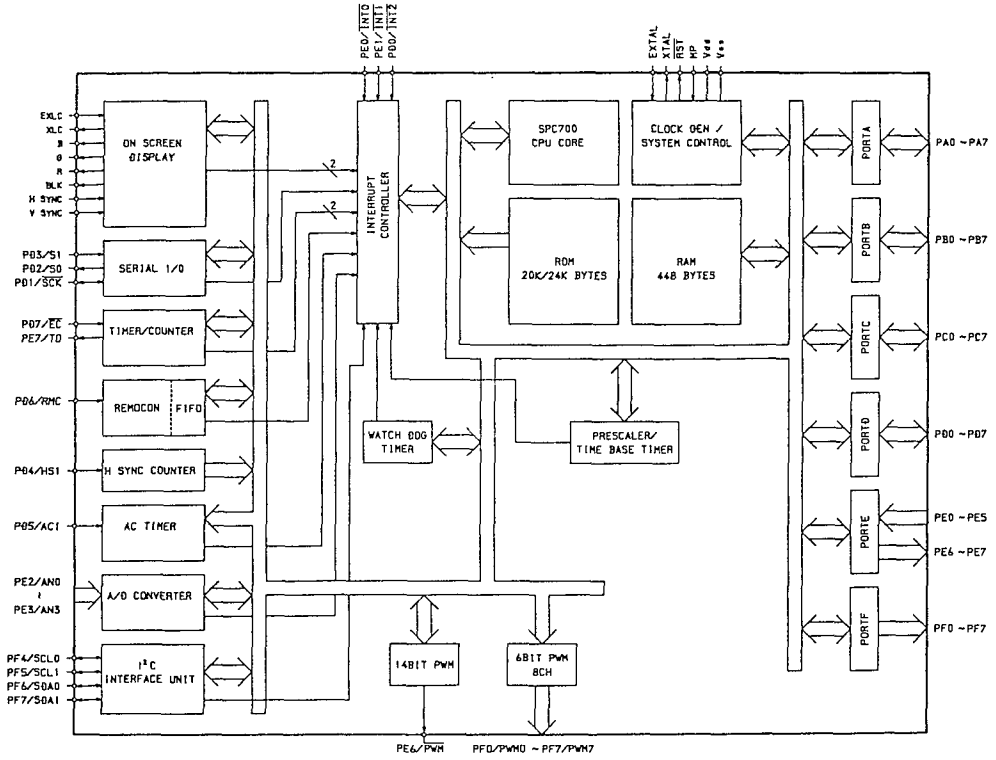


UA A/V SW, A/V INPUT, A/V OUTPUT

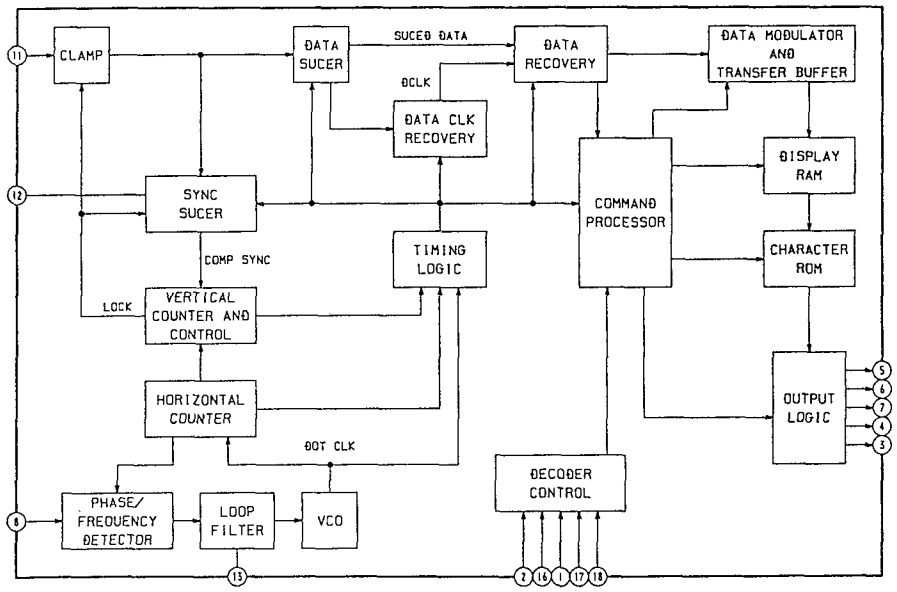
– **UA BOARD** –



M BOARD IC101 CXP80424



M BOARD IC150 Z8622812PSC



M BOARD

IC

IC101	C – 6, H – 6
IC102	B – 7, I – 7
IC103	D – 4, G – 4
IC150	B – 4, I – 4
IC201	C – 2, H – 2
IC202	D – 1
IC301	C – 3, H – 3

TRANSISTOR

Q001	E – 6
Q002	G – 5
Q004	H – 7
Q005	H – 7
Q151	G – 5
Q201	J – 1
Q301	A – 2
Q302	A – 2
Q308	E – 4

DIODE

D001	F – 6
D002	F – 6
D004	E – 4
D005	G – 6
D006	C – 7, I – 7
D007	C – 7, I – 7
D008	C – 7, I – 7
D009	C – 7, I – 7
D150	H – 5
D201	A – 1
D202	A – 1
D205	D – 2
D206	B – 2, I – 2
D301	B – 4, I – 4
D304	B – 4, I – 4

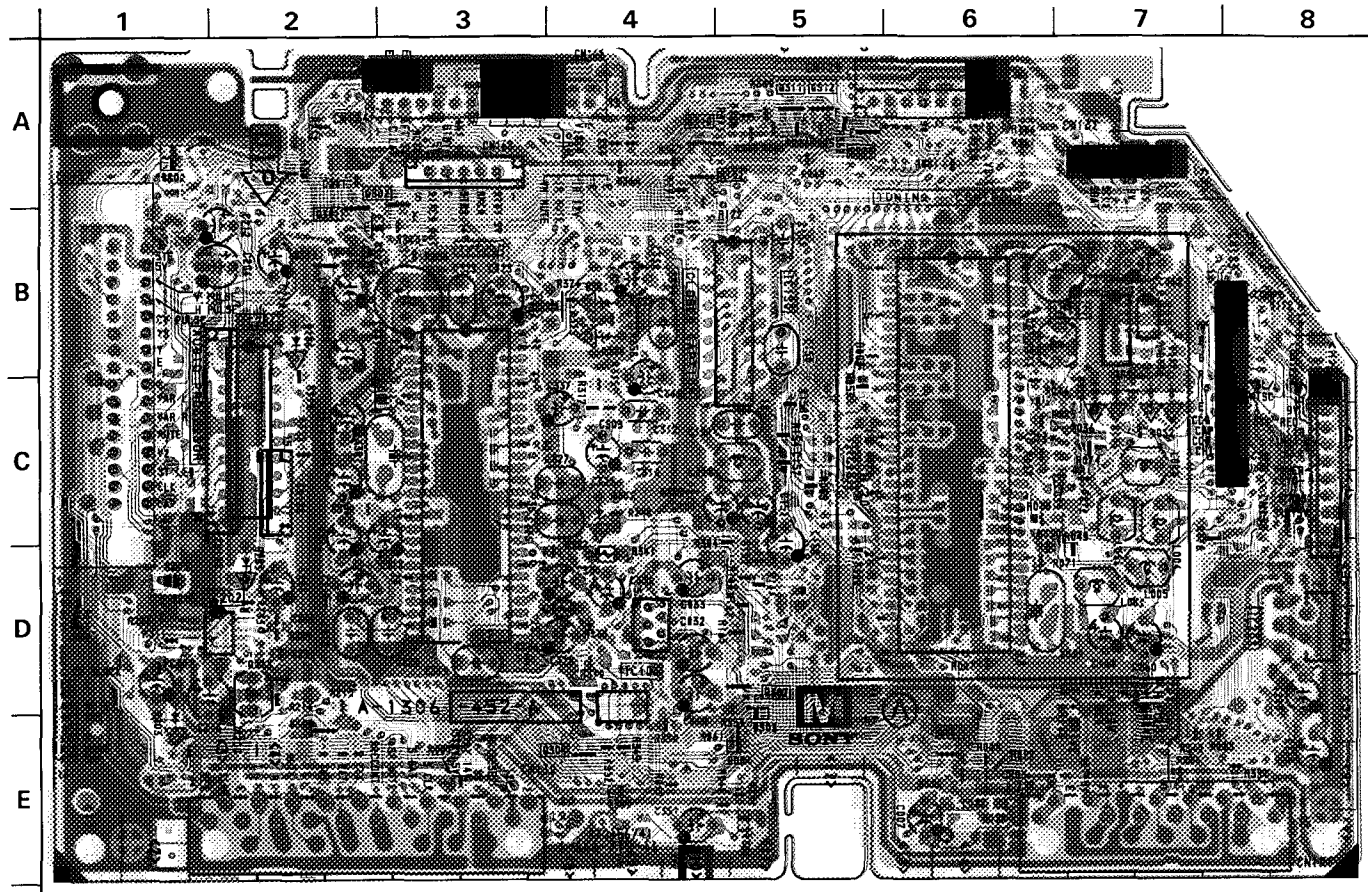
Note :

- ▒▒▒ : Pattern from the side which enables seeing
- ▓▓▓ : Pattern of the rear side.

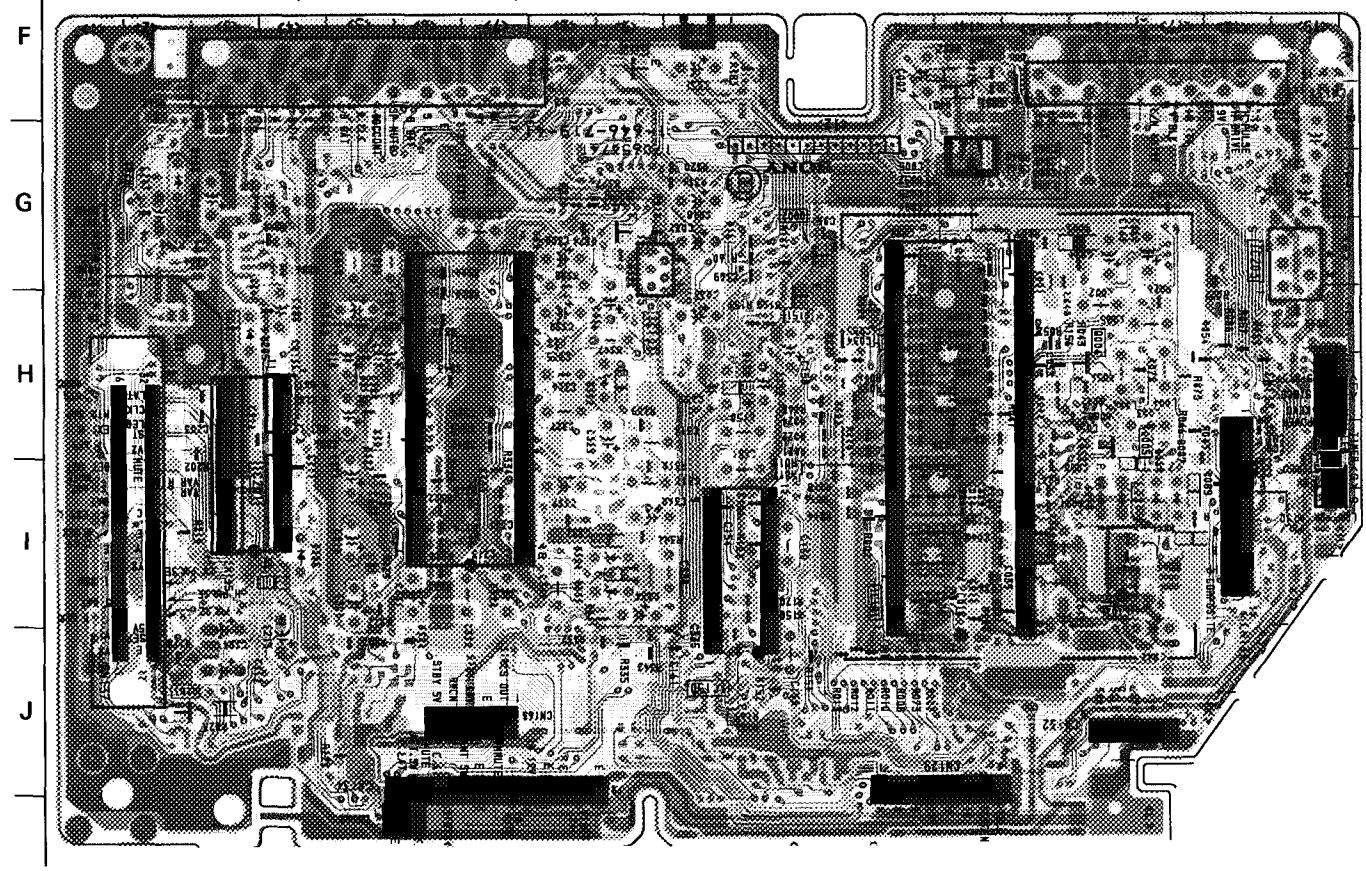
M [Y/C/J, CONTROL, AUDIO CONTROL, CLOSED CAPTION]

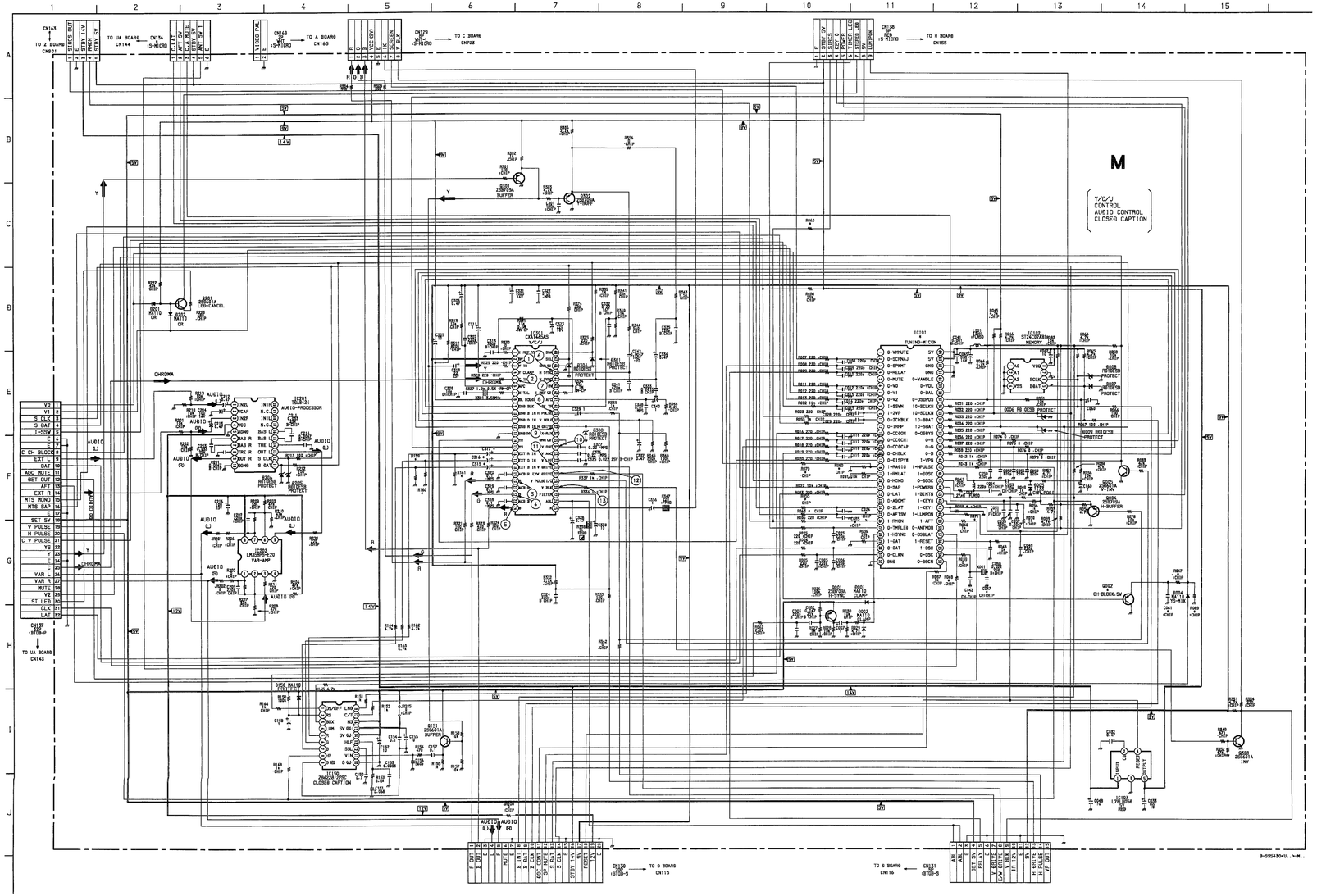
– **M BOARD** –

〈Component Side〉



〈Conductor Side〉





M BOARD IC VOLTAGE LIST

All voltages are in V

IC101①	0	㉑	0	㊶	0
E-11②	0	㉒	5.0	㊷	0
③	4.9	㉓	5.0	㊸	0.3
④	4.9	㉔	5.1	㊹	5.0
⑤	5.1	㉕	5.0	㊺	5.0
⑥	5.1	㉖	2.6	㊻	5.0
⑦	0	㉗	—	㊼	5.1
⑧	0	㉘	—	㊽	2.2
⑨	0	㉙	—	㊾	6.2
⑩	0	㉚	0	㊿	6.2
⑪	0	㉛	0	(71)	6.2
⑫	0	㉜	0	(72)	6.2
⑬	0	㉝	5.0	(73)	6.2
⑭	0	㉞	5.0	(74)	0
⑮	5.1			(75)	5.0
⑯	5.1	IC102①	0	(76)	5.0
⑰	5.1	E-13②	0	(77)	6.2
⑱	—	③	0	(78)	6.2
⑲	0.1	④	0	(79)	6.2
⑳	2.9	⑤	5.0	(80)	6.2
㉑	4.9	⑥	5.0	(81)	—
㉒	5.1	⑦	0	(82)	—
㉓	0.2	⑧	5.0	(83)	—
㉔	5.1			(84)	—
㉕	5.1	IC103①	14.0	(85)	—
㉖	0.1	I-14②	5.8	IC202①	6.1
㉗	0	③	0	G-3②	6.2
㉘	0	④	0	③	6.2
㉙	2.5	⑤	5.0	④	0
㉚	7.5			⑤	6.2
㉛	5.1	IC150①	0	⑥	6.2
㉜	0	I-4②	0	⑦	6.2
㉝	5.1	③	0	⑧	12.0
㉞	2.0	④	—	⑨	0
㉟	0.2	⑤	0	IC301①	6.6
㊱	5.1	⑥	0	F-7②	9.0
㊲	5.1	⑦	0	③	5.0
㊳	5.1	⑧	0.9	④	5.9
㊴	5.1	⑨	0	⑤	3.4
㊵	3.0	⑩	0	⑥	5.1
㊶	2.9	⑪	1.8	⑦	2.4
㊷	0.9	⑫	1.7	⑧	4.1
㊸	0.1	⑬	1.5	⑨	0
㊹	0	⑭	5.0	⑩	0
㊺	0	⑮	5.0	⑪	0
㊻	0	⑯	5.0	⑫	0

— BLANK PIN

M BOARD TRANSISTOR VOLTAGE LIST

Ref	Location	B	C	E
Q001	H-10	5.2	0.8	5.0
Q004	G-14	0.3	0	0.9
Q005	F-14	0.8	0.1	0
Q151	I-5	1.4	5.0	0.8
Q201	D-3	5.6	7.2	4.9
Q301	C-5	2.2	0	2.9
Q302	C-7	2.5	0	3.5
Q308	I-15	0.6	0.8	0

All voltages are in V

M BOARD IC101

PIN	TV	VIDEO 1	VIDEO 2	VIDEO 3
6	5.1	0	5.1	0
7	5.1	5.1	0	0
8	5.1	5.1	0	5.1

9	S VIDEO
ON	OFF
0.5	5.1

	MAIN	MONO	SAP
20	0	5.1	0
21	0	0	5.1

M BOARD ✻ MARK

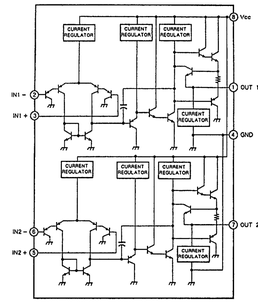
Ref No	Location	KV-32S12/ S15/V18	KV 32TW97/ 68
C034	G-11	220nF	–
C035	G-11	220nF	–
C043	G-12	–	12nF
C047	G-12	–	24nF
C061	H-14	–	100μF
CN134	A-3	6P	–
CN165	A-2	5P	–
IC101	E-11	CXP80424-078S	CXP80424-084S
Q002	H-14	–	2SB709A
R047	G-14	–	47K
R065	G-10	220	–
R060	C-10	18K	CONDUCTOR CHIP (2012)
R063	G-10	220	–
R059	H-12	220	–
R070	F-10	1K	–
R071	G-12	1K	–
R089	H-15	–	27K
R090	G-12	–	10K
R093	G-12	100K	0 CHIP

○ TO BE MOUNT
– NOT MOUNT

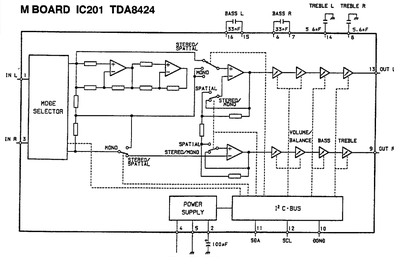
M BOARD WAVEFORMS

① 20Vp-p (H)	② 13Vp-p (H)	③ 50Vp-p (H)
④ 48Vp-p (H)	⑤ 48Vp-p (H)	⑥ 16Vp-p (H)
⑦ 16Vp-p (H)	⑧ 56Vp-p (H)	⑨ 44Vp-p (H)
⑩ 18Vp-p (V)	⑪ 14Vp-p (V)	⑫ 25Vp-p (V)
⑬ 50Vp-p (V)	⑭ 5.3Vp-p (4.17MHz)	

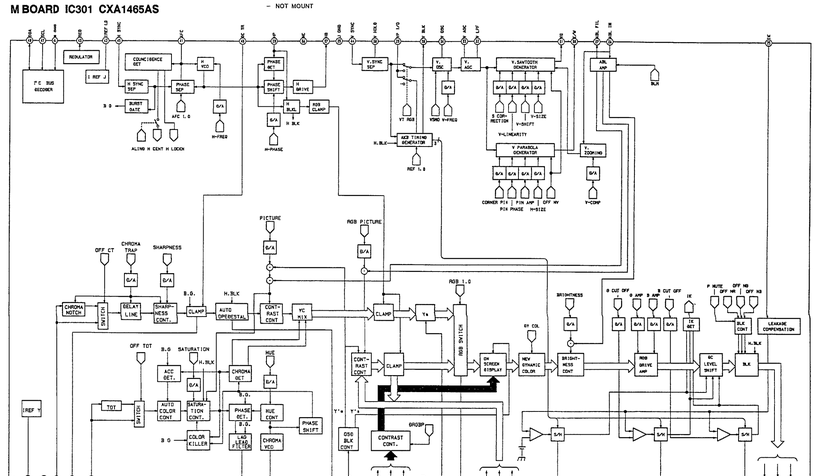
M BOARD IC202 LM358PS-E20

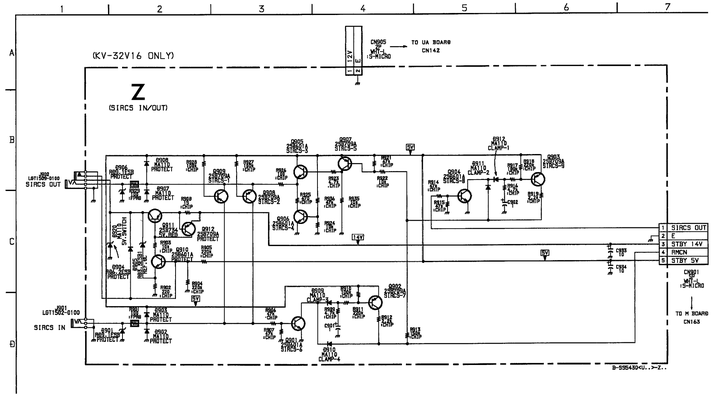


M BOARD IC201 TDA8424



M BOARD IC301 CXA1465AS

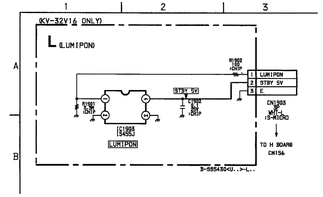


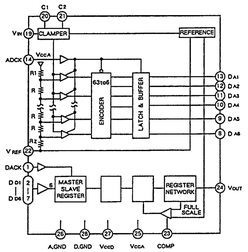


Z BOARD TRANSISTOR VOLTAGE LIST

Ref	Location	B	C	E
Q901	D-4	0	4.8	0
Q902	D-4	4.9	-4.8	5.0
Q903	C-6	4.9	5.0	5.0
Q904	C-5	0	4.9	0
Q905	C-3	0	5.0	0.1
Q906	C-3	0.6	0	0
Q907	C-4	0	5.0	5.0
Q908	C-3	4.9	0	0
Q909	C-3	5.0	0	0
Q910	D-2	5.0	5.0	0
Q911	C-2	5.0	5.0	14.0
Q912	C-2	5.0	14.0	14.0

All voltages are in V





P BOARD IC VOLTAGE LIST

All voltages are in V

IC3200									
E-13	2.0	18	0	28	5.0	0	0	24	0
	0	19	0	29	5.0	51	0	25	0
	0	20	28	30	5.0	4.1	0	31	0
	1.9	21	29	31	5.1	2.0	0	33	0
	1.9	22	22	32	5.0	1.9	0	32	0
	0	23	50	33	—	1.6	0	37	0
	1.4	24	51	46	—	0.9	0	48	0
	1.6~2.1	25	51	25	0	2.8	0	50	0
	2.0	26	0.1	0	0	1.5	0	15	0
	2.0	27	24	25	0	2.7	0	28	0
	2.1	28	2.5	24	0	0	0	15	0
	1.9	29	0	0	0	5.0	0	28	0
	3.8	30	—	0	0	0	0	20	0
	2.8	31	2.5	0	0	5.0	0	14	0
	2.6	32	4.8	5.0	0	0	0	0	0
	2.4	33	3.3	0	—	—	0	28	0
	2.3	34	—	—	—	4.6	0	27	0
	5.0	35	—	2.7	0	4.1	0	28	0
	2.5	36	5.0	0.7	0	2.8	0	33	0
	2.7	37	0.1		0	3.9	0	48	0
	2.6	38	0.9	IC3202	2.6	5.0	0		
	2.5	39	2.5	C-7	5.0	0	0	IC3205	2.5
	2.5	40	2.5	2	0.1	5.0	0	F-11	2.5
	3.3	41	3.3	1	0.1	0	0	1	0
		42	5.0	12	0.1			24	2.5
IC3201	3.1	43	2.5	11	0.1	IC3204	5.0	25	6.0
E-9	3.0	44	2.5	7	0.1	D-5	4.8		
	5.0	45	5.0	17	1.7	3	3.2		
	2.0	46	2.0	27	2.7	6	3.2		
	1.0	47	1.8	10	1.0	4	3.4		
	2.7	48	1.3	30	3.0	5	3.1		
	1.7	49	1.9	31	3.1	15	2.5		
	0.1	50	1.4	37	0.7	16	2.4		
	0.1	51	1.6~2.1	48	2.7	8	2.7		
	0.1	52	2.0	50	0	14	2.5		
	0.1	53	1.9	15	5.0	9	0		
	0.1	54	0	16	0	10	0.1		
	5.0	55	2.1	18	5.0	19	0.1		
	2.6	56	1.8	20	—	21	5.0		
	0	57	3.8	22	—	23	2.6		
	2.7	58	2.8	45	4.8	26	2.3		
	1.5	59	2.5	41	4.1	29	5.0		
	2.8	60	2.4	28	2.8	34	2.9		
	0.9	61	2.3	40	4.0	35	0		
	1.6	62	2.5	50	5.0	36	3.5		
	1.9	63	2.7	0	0	39	3.6		
	2.0	64	2.6	50	5.0	42	2.9		
	4.1	65	2.5	0	0	44	0		
	5.1	66	2.5			47	1.8		
	0	67	5.0	IC3203	2.6	49	0.1		
	0	68	0	F-7	0	52	0		
	5.1	69	5.0	3	5.1	53	2.5		
	5.0	70	5.0	4	0	54	2.7		

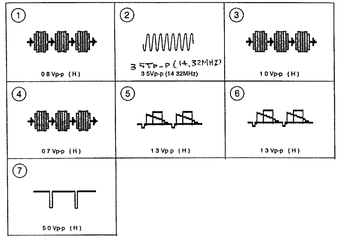
— BLANK PIN

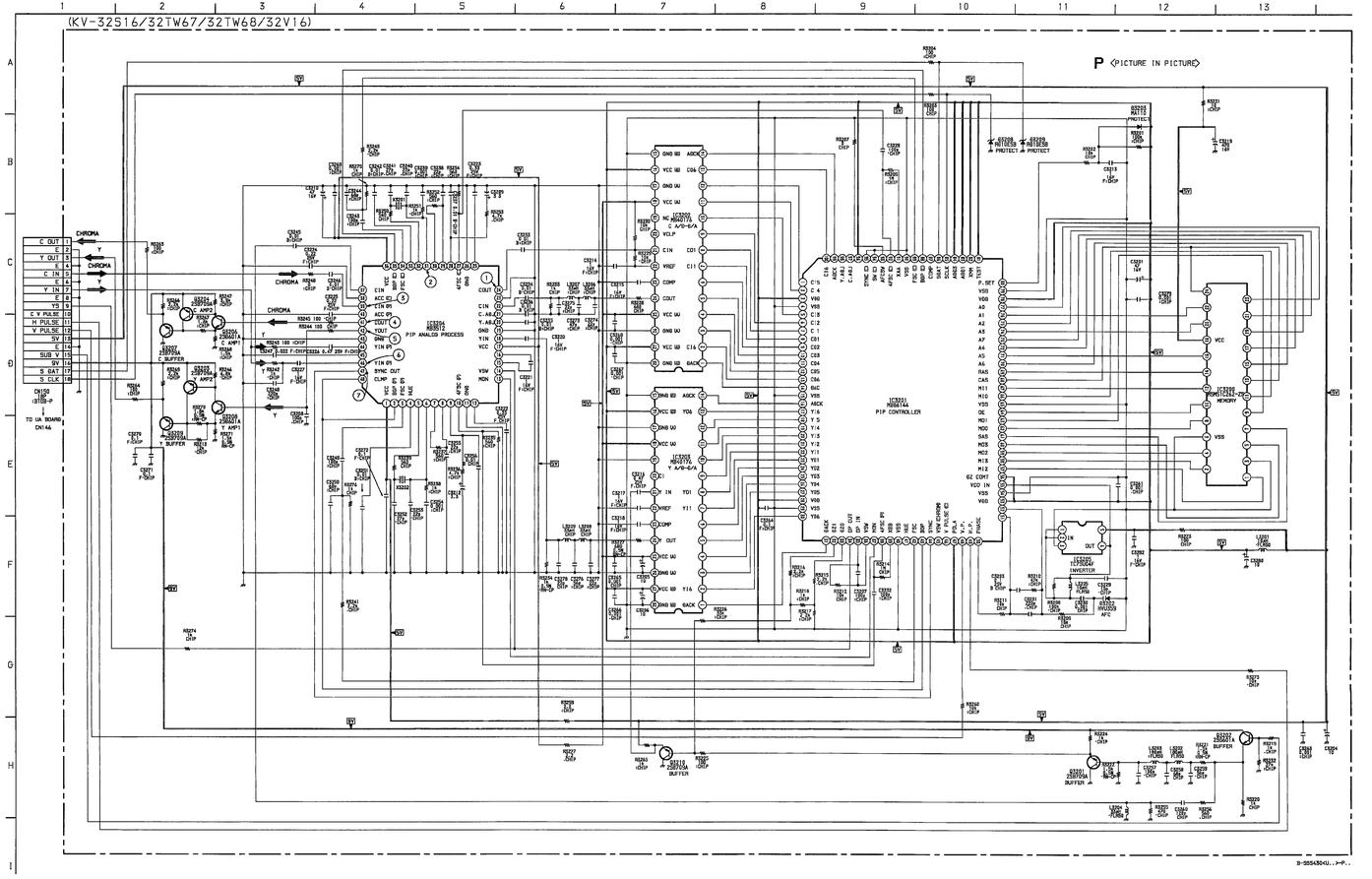
P BOARD TRANSISTOR VOLTAGE LIST

Ref	Location	B	C	E
Q3201	H-12	1.9	0	2.6
Q3202	H-13	4.5	9.0	3.8
Q3203	E-2	8.6	1.5	9.0
Q3204	D-2	8.6	2.7	9.0
Q3205	D-3	2.0	8.5	1.4
Q3207	D-2	2.7	0	3.4
Q3208	E-3	1.4	8.9	0.9
Q3209	E-2	1.5	0	2.2
Q3210	H-7	2.6	0	1.3

All voltages are in V

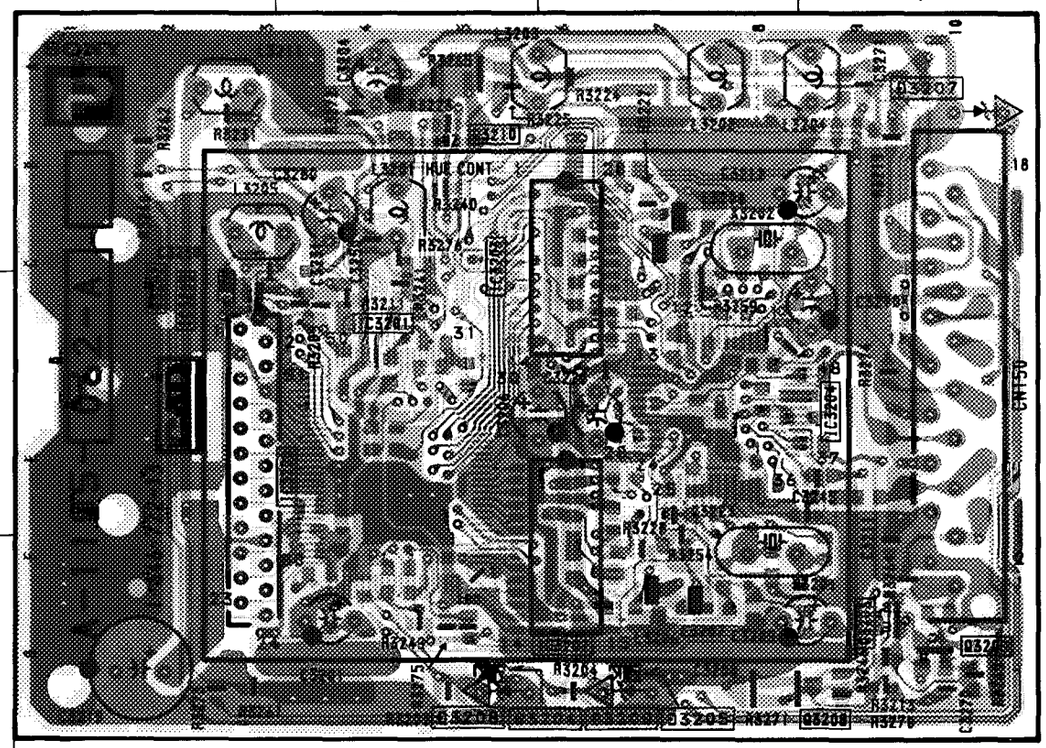
• P BOARD WAVEFORMS



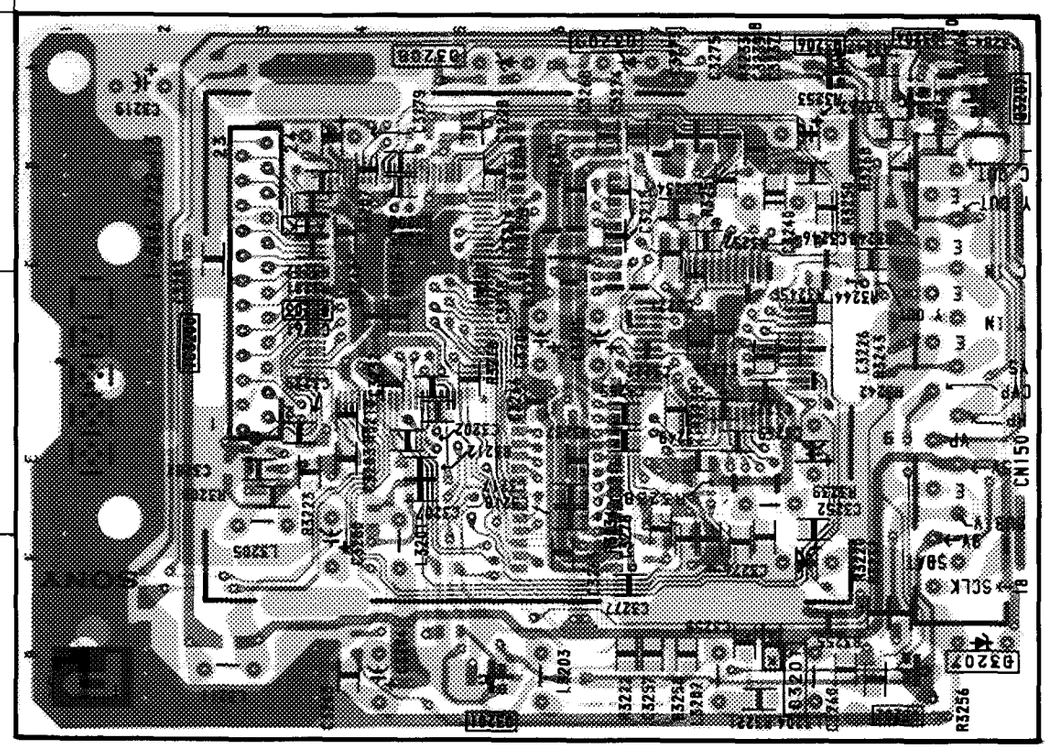


P [PICTURE IN PICTURE] **Z** [SIRCS IN/OUT] **L** [LUMIPON]

– P BOARD – 〈Component Side〉 **(KV-32S16/32TW67/32TW68/32V16 only)**



〈Conductor Side〉

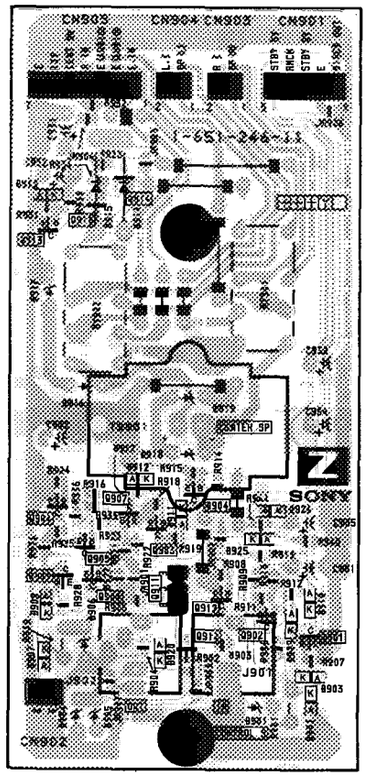


IC	
IC3200	E – 1
IC3201	B – 2
IC3202	C – 3
IC3203	B – 3
IC3204	B – 3
IC3205	B – 1
TRANSISTOR	
Q3201	F – 2
Q3202	F – 4
Q3203	C – 4
Q3204	D – 4
Q3206	D – 4
Q3207	D – 4
Q3208	C – 3
Q3209	C – 4
Q3210	A – 2
DIODE	
D3202	B – 1
D3203	D – 2
D3208	D – 2
D3209	D – 3

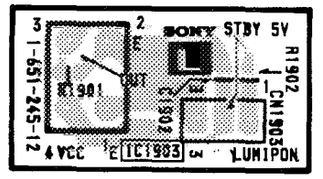
Note :

- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

– Z BOARD – (KV-32V16 only)

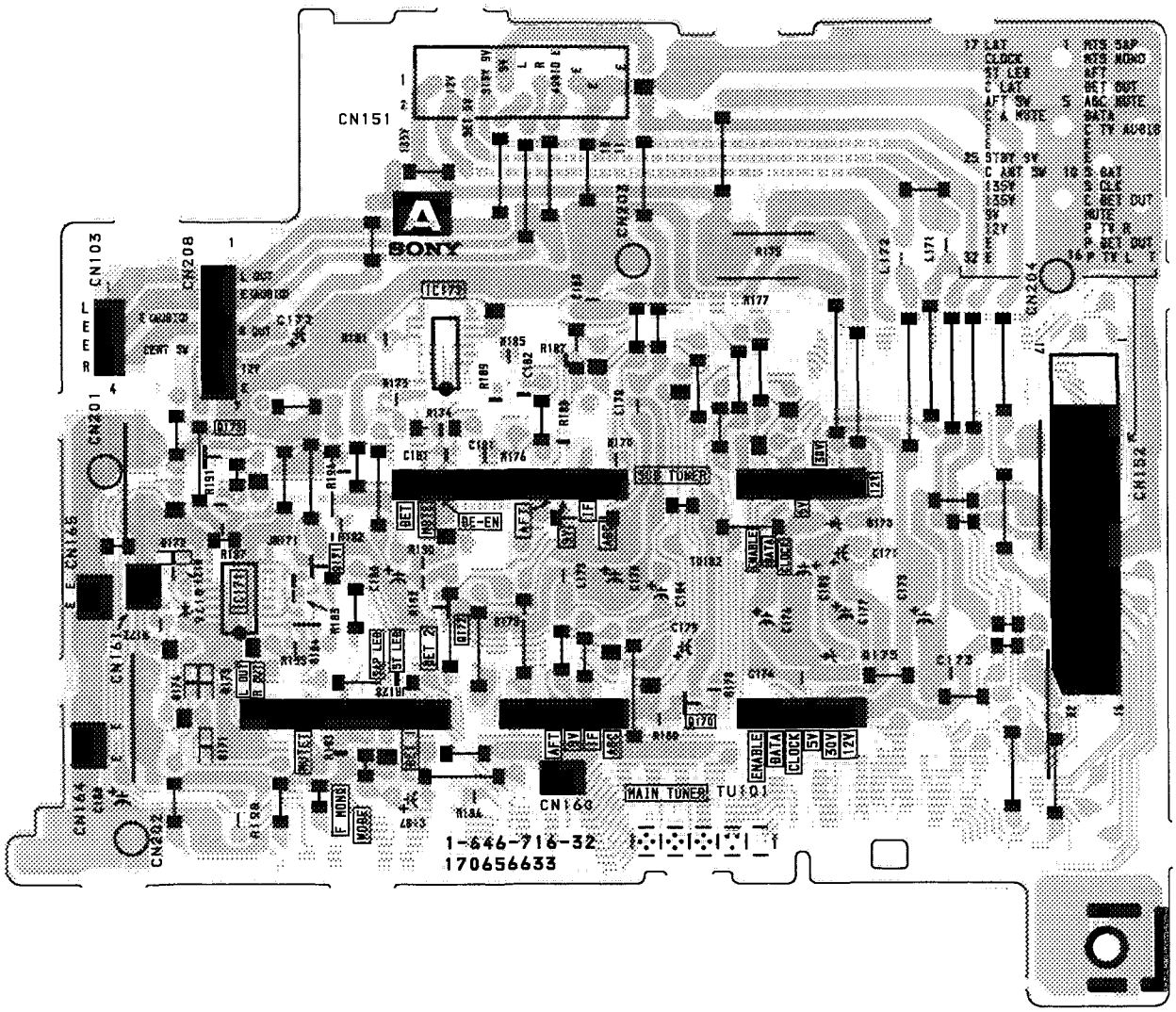


– L BOARD – (KV-32V16 only)

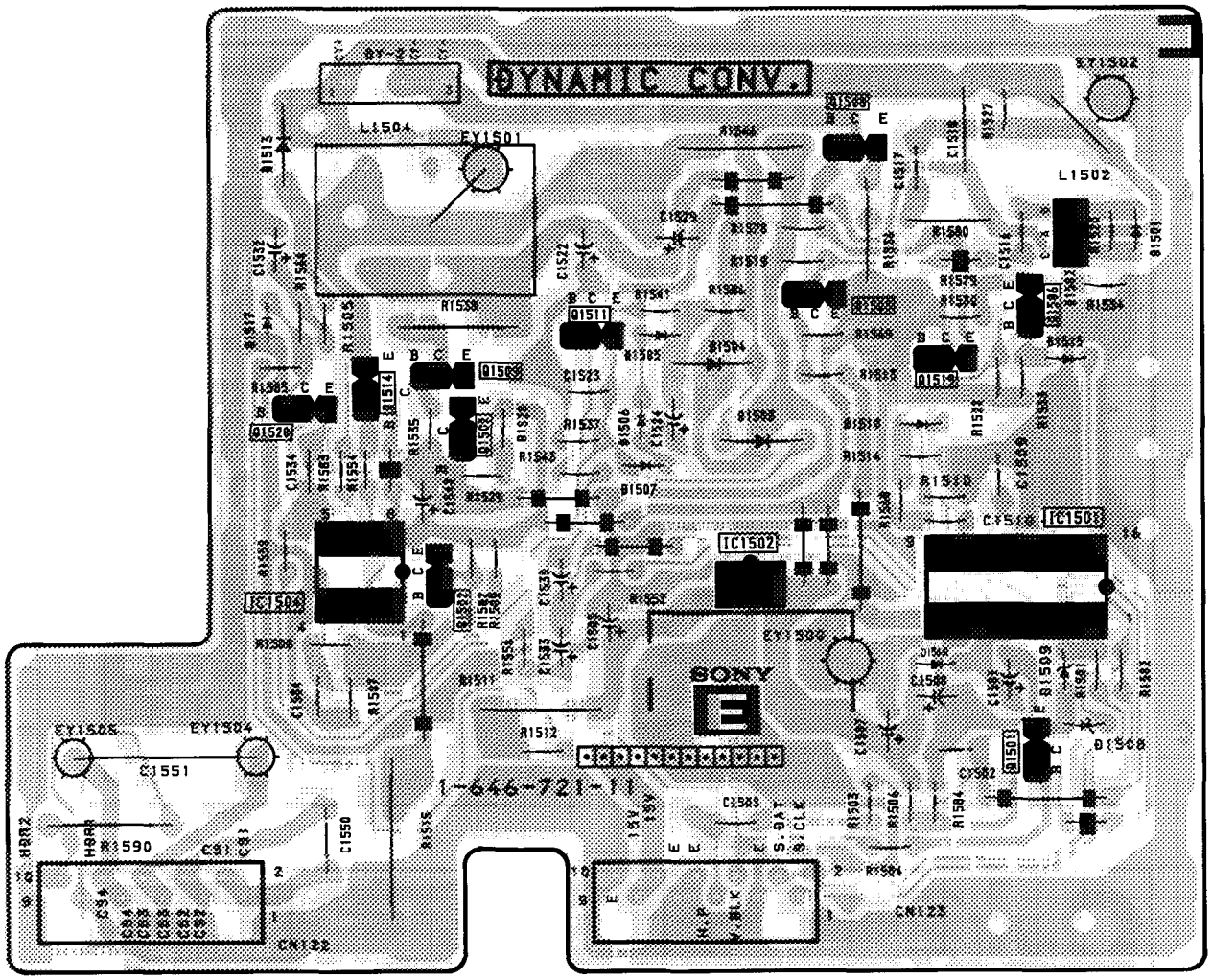


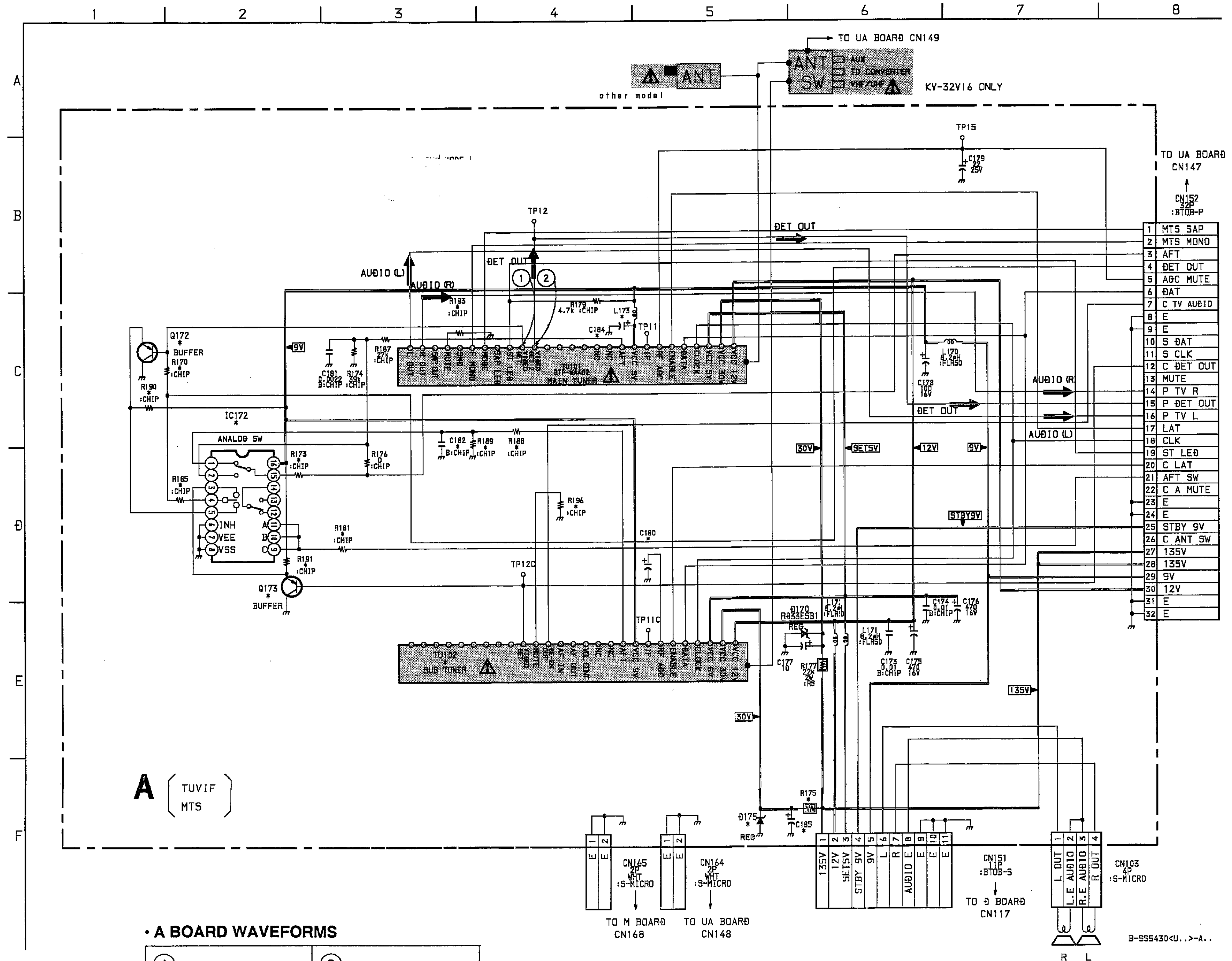
A [TU VIF, MTS] **E** [DYNAMIC, CONVERGENCE]

– A BOARD –

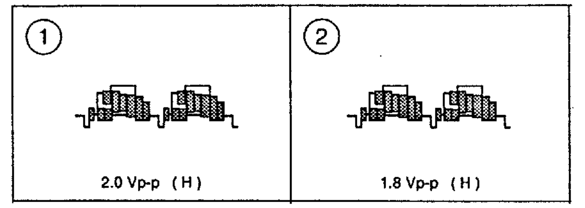


– E BOARD –


DYNAMIC CONV.
SONY
1-646-721-11
L1504
EY1501
L1502
EY1502
IC1503
IC1502
IC1504
EY1505
EY1504
EY1503
CN132
CN133


TO UA BOARD CN149
ANT
ANT SW
AUX
TO CONVERTER
VHF/UHF
other model
KV-32V16 ONLY
TP15
TO UA BOARD CN147
CN152 32P :BTOB-P
1 MTS SAP
2 MTS MONO
3 AFT
4 DET OUT
5 AGC MUTE
6 DAT
7 C TV AUDIO
8 E
9 E
10 S DAT
11 S CLK
12 C DET OUT
13 MUTE
14 P TV R
15 P DET OUT
16 P TV L
17 LAT
18 CLK
19 ST LED
20 C LAT
21 AFT SW
22 C A MUTE
23 E
24 E
25 STBY 9V
26 C ANT SW
27 135V
28 135V
29 9V
30 12V
31 E
32 E
TP12
DET OUT
AUDIO (L)
AUDIO (R)
TU101 BTF-WA402 MAIN TUNER
Q172 BUFFER
IC172 ANALOG SW
Q173 BUFFER
TU102 SUB TUNER
A (TUVIF MTS)
CN165 2P WHT :S-MICRO
TO M BOARD CN168
CN164 2P WHT :S-MICRO
TO UA BOARD CN148
CN151 11P :BTOB-S
TO D BOARD CN117
CN103 4P :S-MICRO
L OUT
L.E AUDIO
R.E AUDIO
R OUT
R L
B-SS5430<U..>-A..

A BOARD WAVEFORMS



A BOARD * MARK

Ref. No.	Location	KV-32S12/S16	KV-32TW67/68	KV-32V16
C180	D-5	–	–	22/25V
C182	C-3	–	–	0.0022
C184	C-5	–	–	10
C185	F-6	–	–	10
D175	F-5	–	–	RD30ESB1
IC172	D-2	–	–	BU4053BF-T1
L173	C-5	JW (5.0)	JW (5.0)	8.2 μH
Q172	C-1	–	–	2SB709A
Q173	D-2	–	–	2SB709A
R170	C-2	100	100	–
R173	D-2	–	–	CONDUCTOR CHIP (2012)
R175	F-6	–	–	22K/2W
R176	D-3	CONDUCTOR CHIP (2012)	CONDUCTOR CHIP (2012)	–
R181	D-3	–	–	100
R185	D-2	–	–	100
R188	C-4	–	–	39K
R189	C-4	–	–	27K
R190	C-1	–	–	4.7K
R191	D-2	–	–	4.7K
R193	C-3	330	–	330
R196	D-4	–	–	330
TU102	E-4	–	–	BTF-LA401

○:TO BE MOUNT
–: NOT MOUNT

A BOARD IC VOLTAGE LIST

IC172 ①	1.9
(D-2) ②	1.9
③	4.9
④	5.8
⑤	5.2
⑥	E
⑦	E
⑧	E
⑨	2.9
⑩	2.9
⑪	2.9
⑫	—
⑬	—
⑭	—
⑮	1.9
⑯	9.0

All voltages are in V

—: BLANK PIN

Ref	PIN NAME	VOLTAGE
TU101	L OUT	4.6
C-4	R OUT	4.6
	ST LED	0.2
	VIDEO DET	4.6
	VIDEO DET2	4.8

All voltages are in V

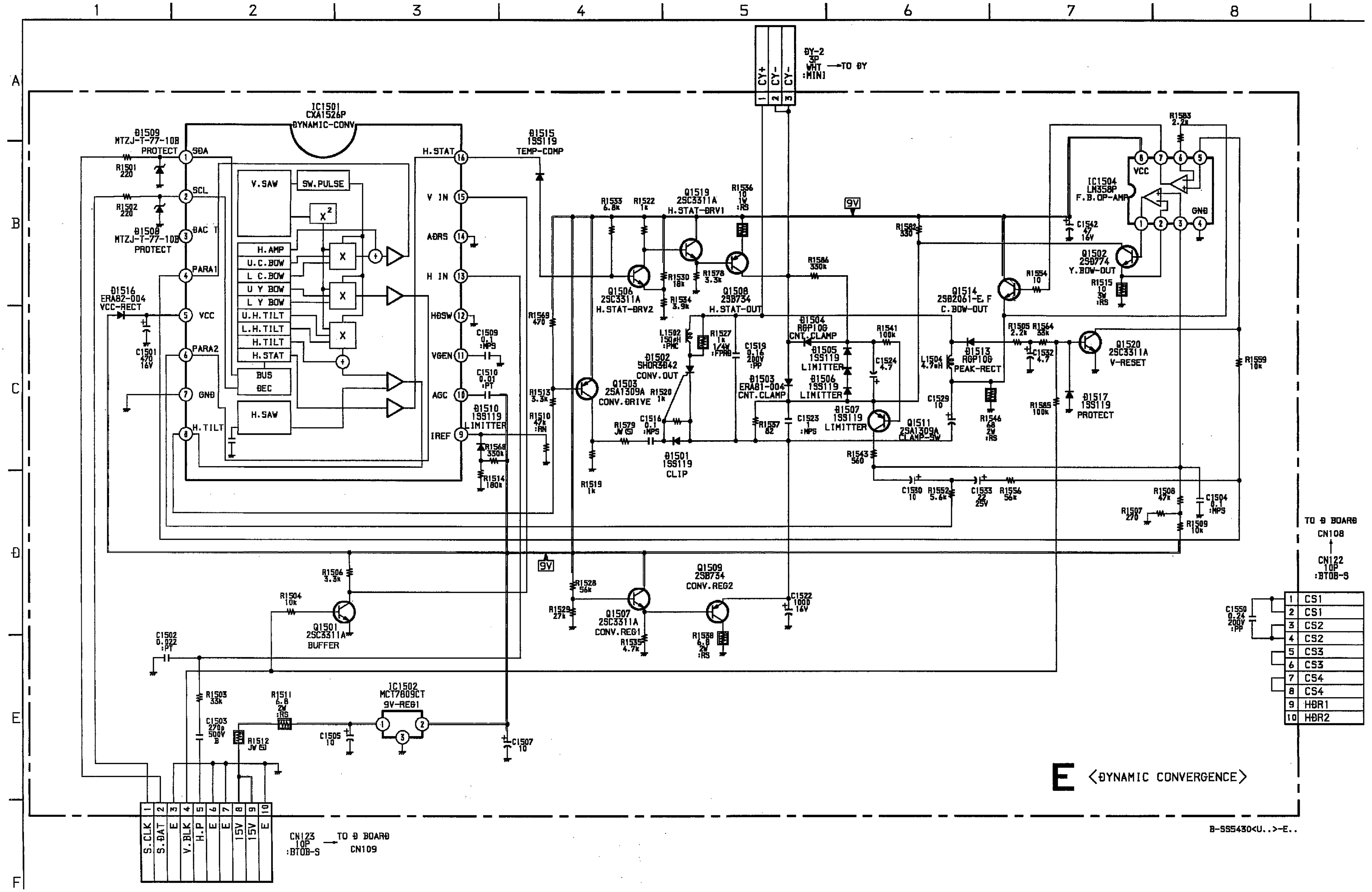
A BOARD TRANSISTOR VOLTAGE LIST

Ref	Location	B	C	E
Q172	C-1	4.6	0	5.2
Q173	D-2	5.8	0	6.4

All voltages are in V

TU101	PIN NAME	MAIN	MONO	SAP
C-4	F MONO	0	5.1	0
	MODE	0	0	5.1

All voltages are in V


DY-2 3P WHT :MINI →TO DY
CY+
CY-
CY-
IC1501 CXA1526P DYNAMIC-CONV
V.SAW
SW.PULSE
H.AMP
U.C.BOW
L C.BOW
U Y BOW
L Y BOW
U.H.TILT
L.H.TILT
H.TILT
H.STAT
BUS DEC
H.SAW
IC1504 LM358P F.B.OP-AMP
Q1519 2SC3311A H.STAT-DRV1
Q1506 2SC3311A H.STAT-DRV2
Q1508 2SB734 H.STAT-OUT
Q1503 2SA1309A CONV.DRIVE
Q1514 2SB2061-E, F C.BOW-OUT
Q1502 2SD774 Y.BOW-OUT
Q1520 2SC3311A V-RESET
Q1511 2SA1309A CLAMP-SW
Q1501 2SC3311A BUFFER
Q1507 2SC3311A CONV.REG1
Q1509 2SB734 CONV.REG2
IC1502 MCT7809CT 9V-REG1
TO D BOARD CN108
CN122 10P :BTOB-S
1 CS1
2 CS1
3 CS2
4 CS2
5 CS3
6 CS3
7 CS4
8 CS4
9 HDR1
10 HDR2
S.CLK
S.DAT
E
V.BLK
H.P
E
E
15V
15V
E
CN123 10P :BTOB-S → TO D BOARD CN109
E <DYNAMIC CONVERGENCE>
B-SS5430<U..>-E..

E BOARD IC VOLTAGE LIST

IC1501 ①	5.1
B-3 ②	5.1
③	—
④	4.8
⑤	9.0
⑥	3.4
⑦	0
⑧	4.9
⑨	2.0
⑩	4.5
⑪	5.2
⑫	0
⑬	4.6
⑭	0
⑮	8.1
⑯	4.5
IC1502 ①	15.1
E-3 ②	9.0
③	0
IC1504 ①	1.4
B-8 ②	0.8
③	0.8
④	0
⑤	4.8
⑥	4.8
⑦	5.4
⑧	9.0

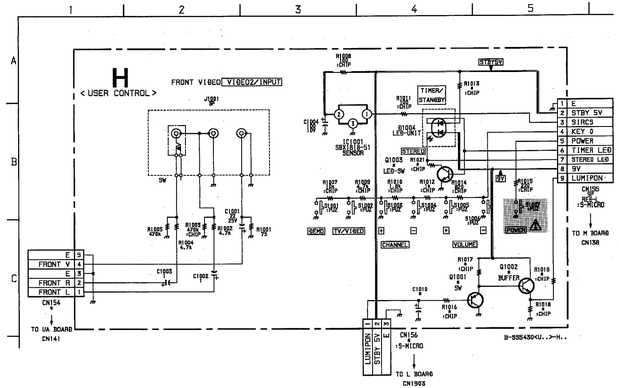
All voltages are in V

—: BLANK PIN

E BOARD TRANSISTOR VOLTAGE LIST

Ref	Location	B	C	E
Q1501	D-3	0.1	8.1	0
Q1502	B-7	1.4	4.2	0.8
Q1503	C-4	9.0	7.7	9.0
Q1506	B-4	4.1	8.8	3.5
Q1507	D-4	3.0	9.0	2.4
Q1508	B-5	8.1	4.5	8.8
Q1509	D-5	2.4	0.5	3.1
Q1511	C-6	3.8	0.8	4.2
Q1514	B-7	5.4	9.0	4.8
Q1519	B-5	8.8	9.0	8.1
Q1520	C-7	-0.5	4.8	0

All voltages are in V



H BOARD * MARK

Ref. No.	Location	KV-32S12/S16	KV-32TW67/ 68	KV-32V16
C1010	C – 4	–	–	0.47
CN156	C – 4	–	3P	3P
Q1001	C – 4	–	–	2SB709A
Q1002	C – 5	–	–	2SD601A
Q1003	B – 4	2SD601A		2SD601A
R1013	B – 4	–	220	–
R1016	C – 4	–	–	220
R1017	C – 4	–	–	220K
R1018	C – 5	–	–	47K
R1019	C – 5	–	–	100
R1021	B – 4	680	–	680

○:TO BE MOUNT
– : NOT MOUNT

H BOARD IC VOLTAGE LIST

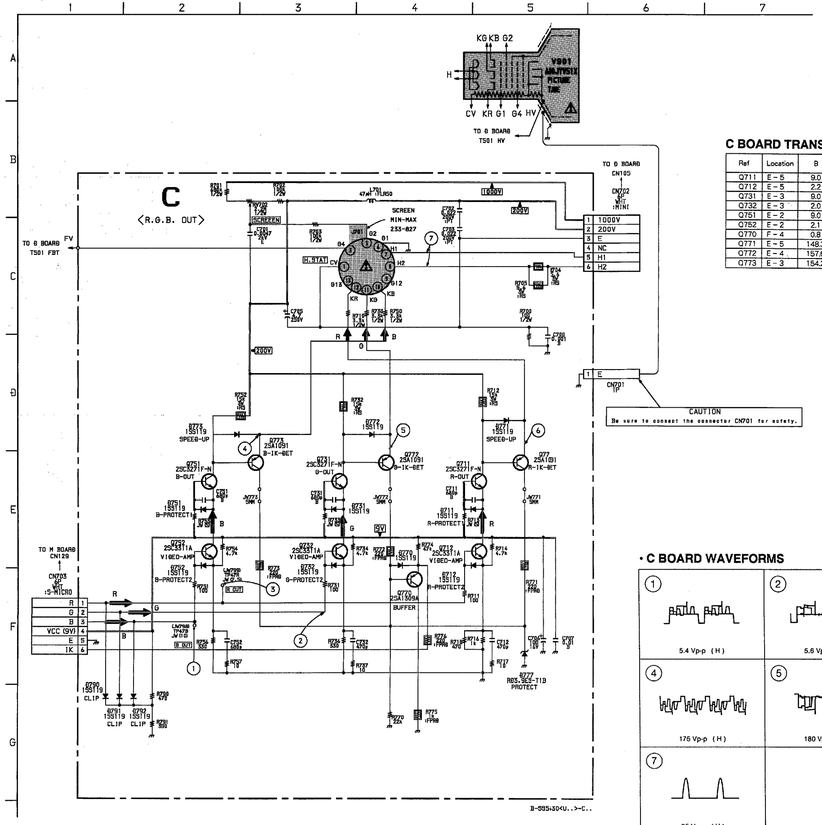
IC1001 ①	4.8	IC1903 ①	0
B – 3 ②	5.0	B – 2 ②	0
③	0	③	0
		④	5.0

All voltages are in V

H BOARD TRANSISTOR VOLTAGE LIST

Ref	Location	B	C	E
Q1001	C – 5	0	0	4.5
Q1002	C – 5	4.5	8.9	5.0
Q1003	B – 4	0.1	6.9	0

All voltages are in V

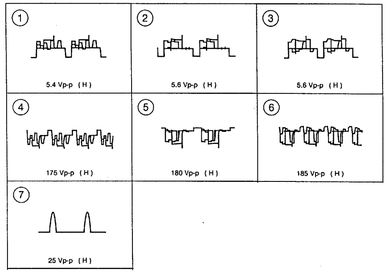


C BOARD TRANSISTOR VOLTAGE LIST

Ref	Location	B	C	E
Q711	E – 5	9.0	148.3	8.6
Q712	E – 5	2.2	8.6	1.7
Q731	E – 3	9.0	157.6	8.6
Q732	E – 3	2.0	8.6	1.6
Q751	E – 2	9.0	154.2	8.6
Q752	E – 2	2.1	8.6	1.7
Q770	F – 4	0.8	0	0.4
Q771	E – 5	148.3	0.9	145.3
Q772	E – 4	157.6	0.9	154.7
Q773	E – 3	154.2	0.9	150.8

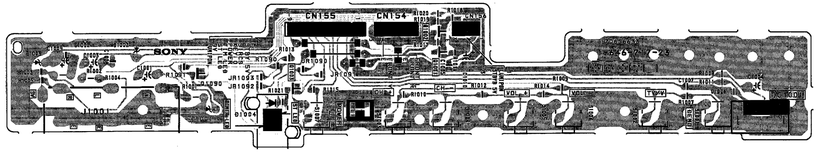
All voltages are in V

• C BOARD WAVEFORMS

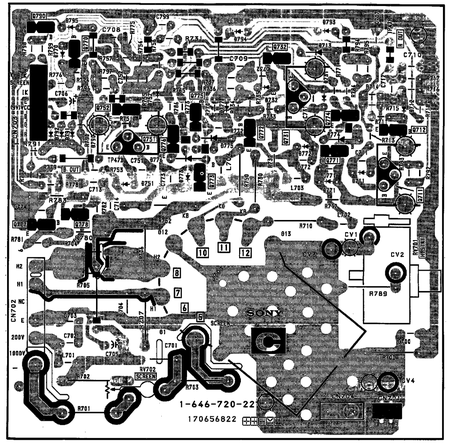


H [USER CONTROL] **C** [R. G. B. OUT]

– H BOARD –

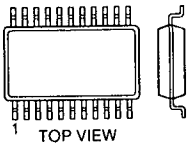


– C BOARD –



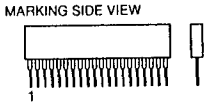
4-5. SEMICONDUCTIONS

BU4053BCF



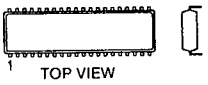
16pin SOP

CAT51C262-ZS
MSM51C262-ZS



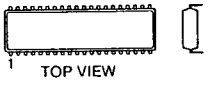
24pin SIP

CXA1465AS
CXA1545AS



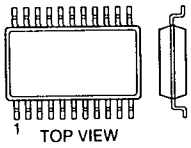
48pin DIP

CXA1526P
MB40176PF-G-BND-EF



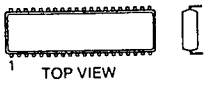
16pin DIP

CXP80424-079S



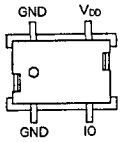
28pin SOP

CXP80424-084S

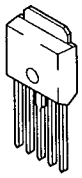


64pin DIP

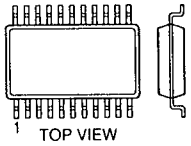
IS455J



L78LR05D-MA



LM358PS



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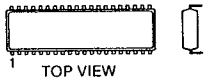

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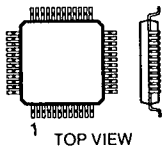

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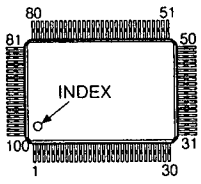

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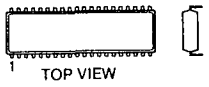

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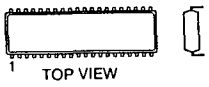

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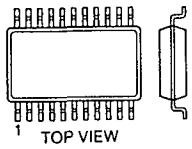

8pin SOP

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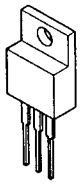

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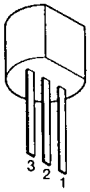

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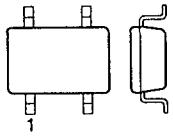

5pin CHIP

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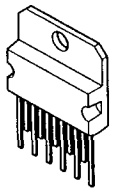

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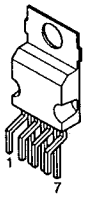

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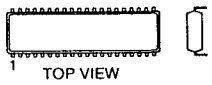

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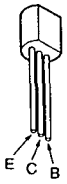

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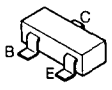

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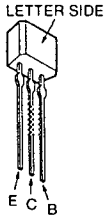

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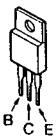

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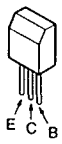

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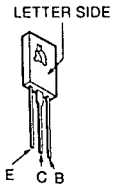

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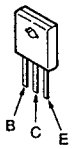

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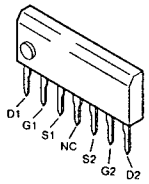

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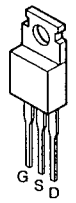

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ERA85-009
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RD12ESB3
RD3.9ESB2
RD30ESB2
RD33ESB1
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RD5.1ESB1
RD6.2ESB2
RD8.2ESB3
RD9.1ESL
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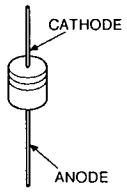

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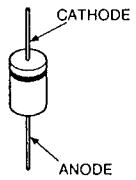

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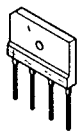

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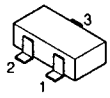

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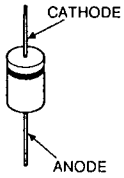

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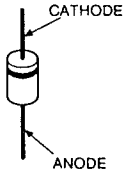

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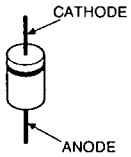

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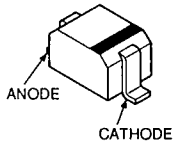

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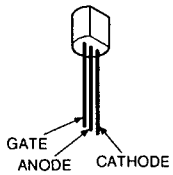


SECTION 5
EXPLODED VIEWS

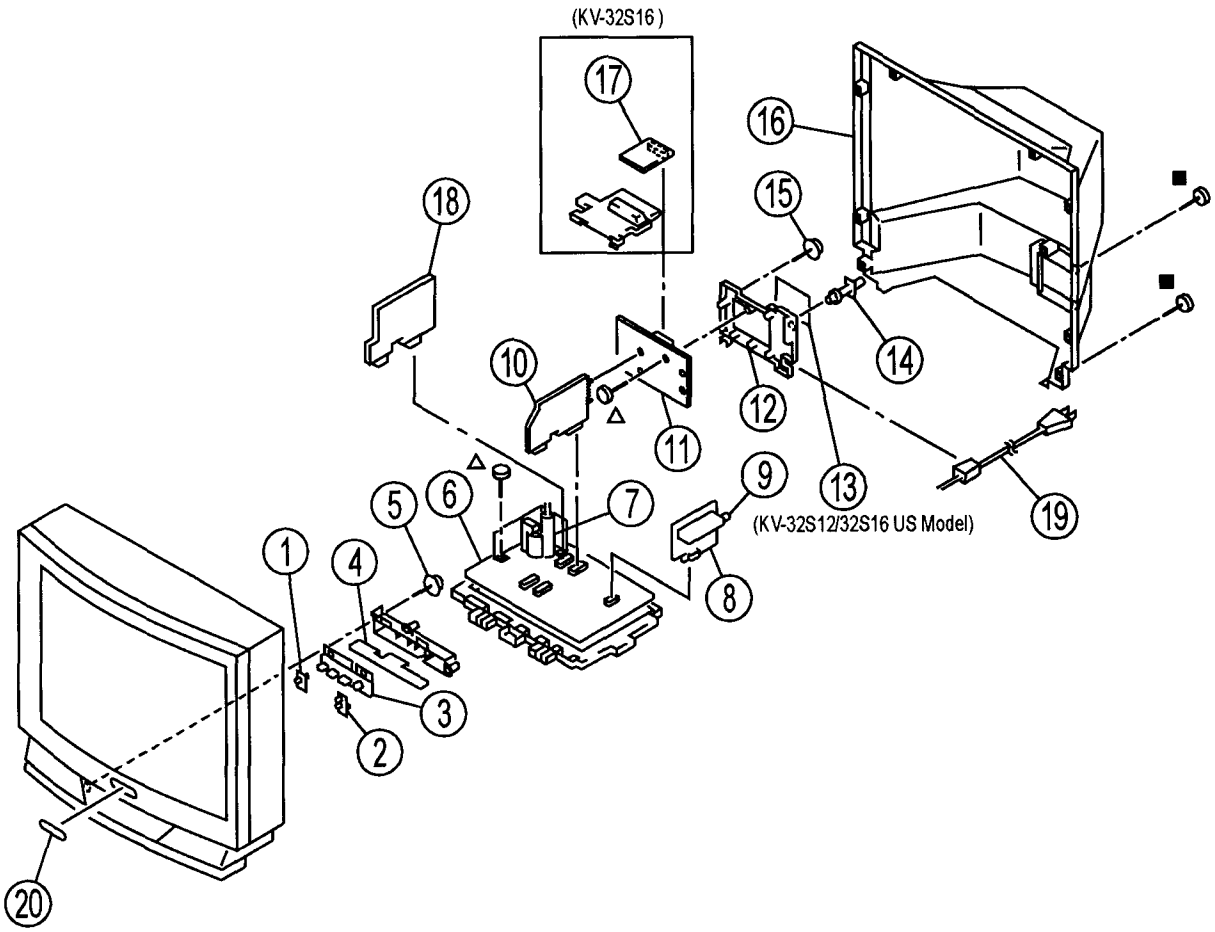
NOTE
- Items with on part number and on description are not stocked because they are seldom required for routine service
- The construction parts of an assembled part are indicated with a collation number in the remark column
- Items marked "*" are not stocked since they are seldom required for routine service Some delay should be anticipated when ordering these items

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite
Ne les remplacer que par une piece portant le numero specifie

5-1. CHASSIS (KV-32S12/32S16)

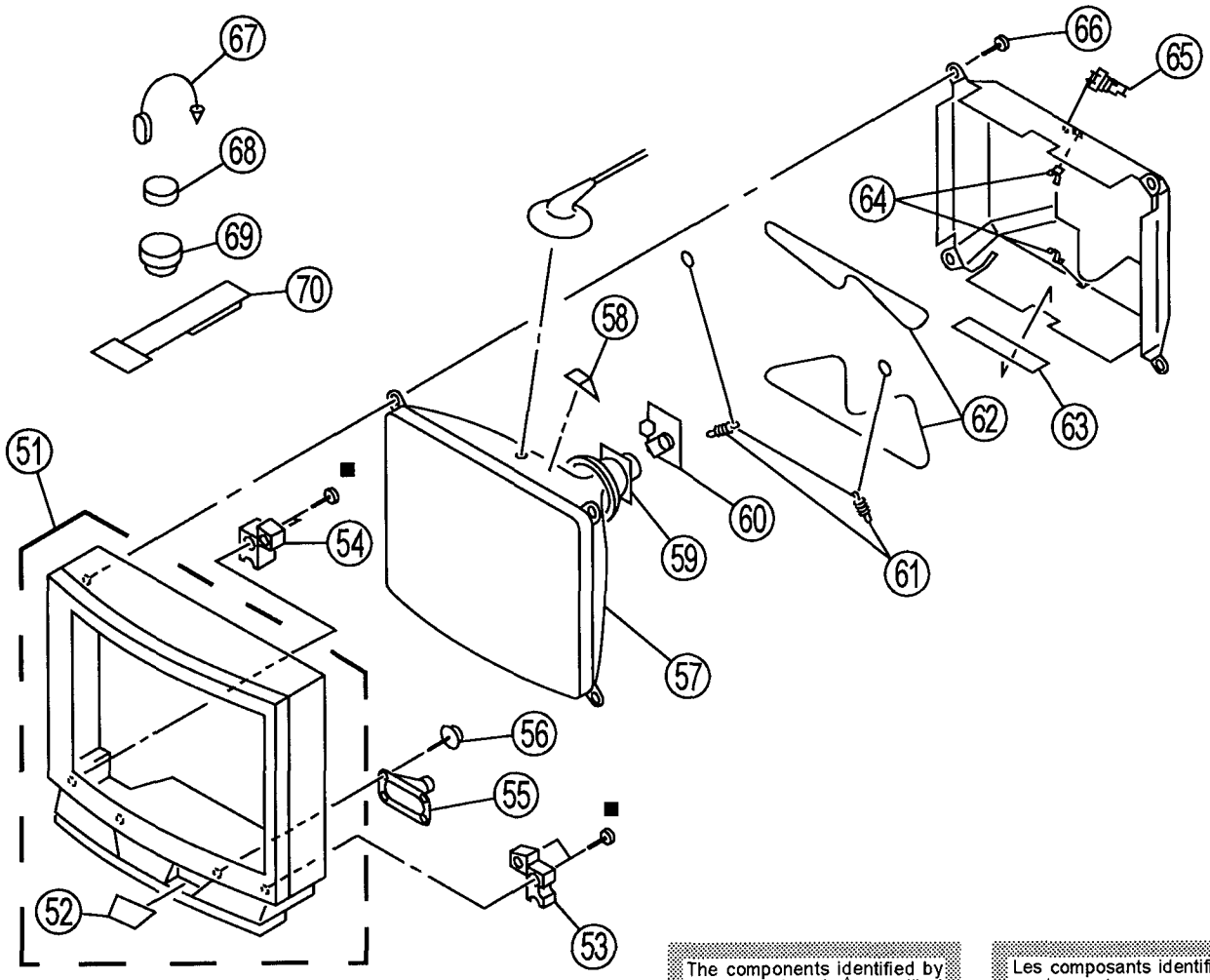
△ +BVTP 4x12 7-685-661-14
■ +BVTP 4X16 7-685-663-79



REF. NO	PART NO.	DESCRIPTION	REMARK
1	4-039-458-01	FILTER, REMOTE	
2	4-039-457-21	GUIDE, LED	
3	4-043-303-01	BUTTON, MULTI	
4	* A-1371-994-A	H BOARD, COMPLETE	
5	4-319-520-11	SCREW, SPECIAL (+PW 4X30)	
6	* A-1364-193-A	D BOARD, COMPLETE	
7	⚠ 1-453-146-11	TRANSFORMER ASSY, FLYBACK (NX-2604A3)	
8	* A-1297-221-A	A BOARD, COMPLETE	
9	⚠ 8-598-254-00	TUNER BTF-WA402	
10	* A-1306-454-A	M BOARD, COMPLETE	
11	* A-1394-527-A	UA BOARD, COMPLETE (KV-32S16 US model)	
	* A-1394-544-A	UA BOARD, COMPLETE (KV-32S16 Canadian model)	
	* A-1394-676-A	UA BOARD, COMPLETE (KV-32S12)	
12	4-039-524-01	PANELE, ANTENNA TERMINAL	
13	4-039-834-01	LABEL, TERMINAL (KV-32S12/32S16 US model)	
14	1-766-374-11	PULUG, F-PIN	
15	4-382-854-11	SCREW (M3X10), P, SW (+)	
16	4-039-634-11	COVER, REAR	
17	* A-1195-062-A	P BOARD, COMPLETE (KV-32S16 US model)	
18	* A-1341-622-A	E BOARD, COMPLETE	
19	⚠ 1-751-059-11	CORD, POWER (WITH CNNECTOR) 10A/125V	
20	4-046-160-01	EMBLEM (NO 9), SONY	

5-2. PICTURE TUBE (KV-32S12/32S16)

■ BVTP 4x16 7-685-663-79



The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

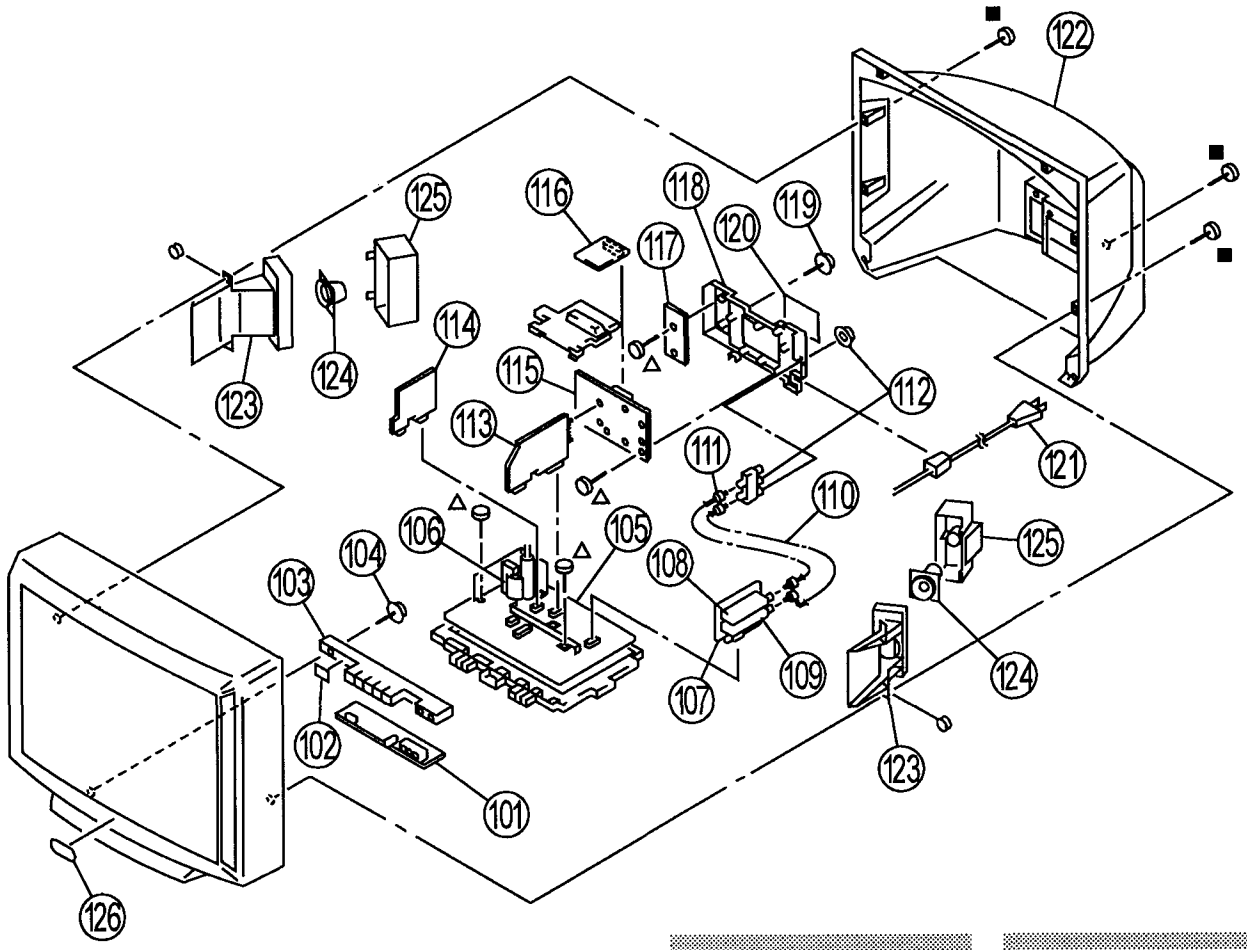
Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie

REF. NO	PART NO	DESCRIPTION	REMARK
51	X-4031-657-1	BEZET ASSY	52
52	4-043-222-01	LID, CONTROL	
53	* 4-031-428-11	SUPPORT (RIGHT) (PICTURE TUBE)	
54	* 4-031-430-11	SUPPORT (LEFT) (PICTURE TUBE)	
55	1-504-531-11	SPEAKER (13 1X6 2CM)	
56	4-388-477-01	SCREW (3X16), TAPPING, +BV WASHER	
57	⚠ 8-733-739-05	PICTURE TUBE (A80JYV51X)	
58	4-041-361-01	SPACER, DY	
59	⚠ 8-451-315-41	DEFLECTION YOKE Y34FXA (VTM)	
60	* A-1331-351-A	C BOARD, COMPLETE	

REF. NO	PART NO	DESCRIPTION	REMARK
61	4-063-329-01	SPRING (B), TENSION	
62	⚠ 1-402-952-11	COIL, DEMAGETIZATION	
63	* 4-031-698-01	SHEET, ADHESIVE	
64	4-371-629-01	STOPPER, WIRE	
65	4-033-681-01	HOLDER, LEAD	
66	4-041-268-01	SCREW (7), TAPPING	
67	4-308-870-00	CLIP, LEAD WIRE	
68	1-452-032-00	MAGNET, DISC, 10MMø	
69	1-452-094-00	MAGNET, ROTATABLE DISK, 15MMø	
70	X-4306-312-0	PERMALLOY AASY, CONVERGENCE	

5-3. CHASSIS (KV-32V16)

△ +BVTP 4x12 7-685-661-14
■ +BVTP4X16 7-685-663-79

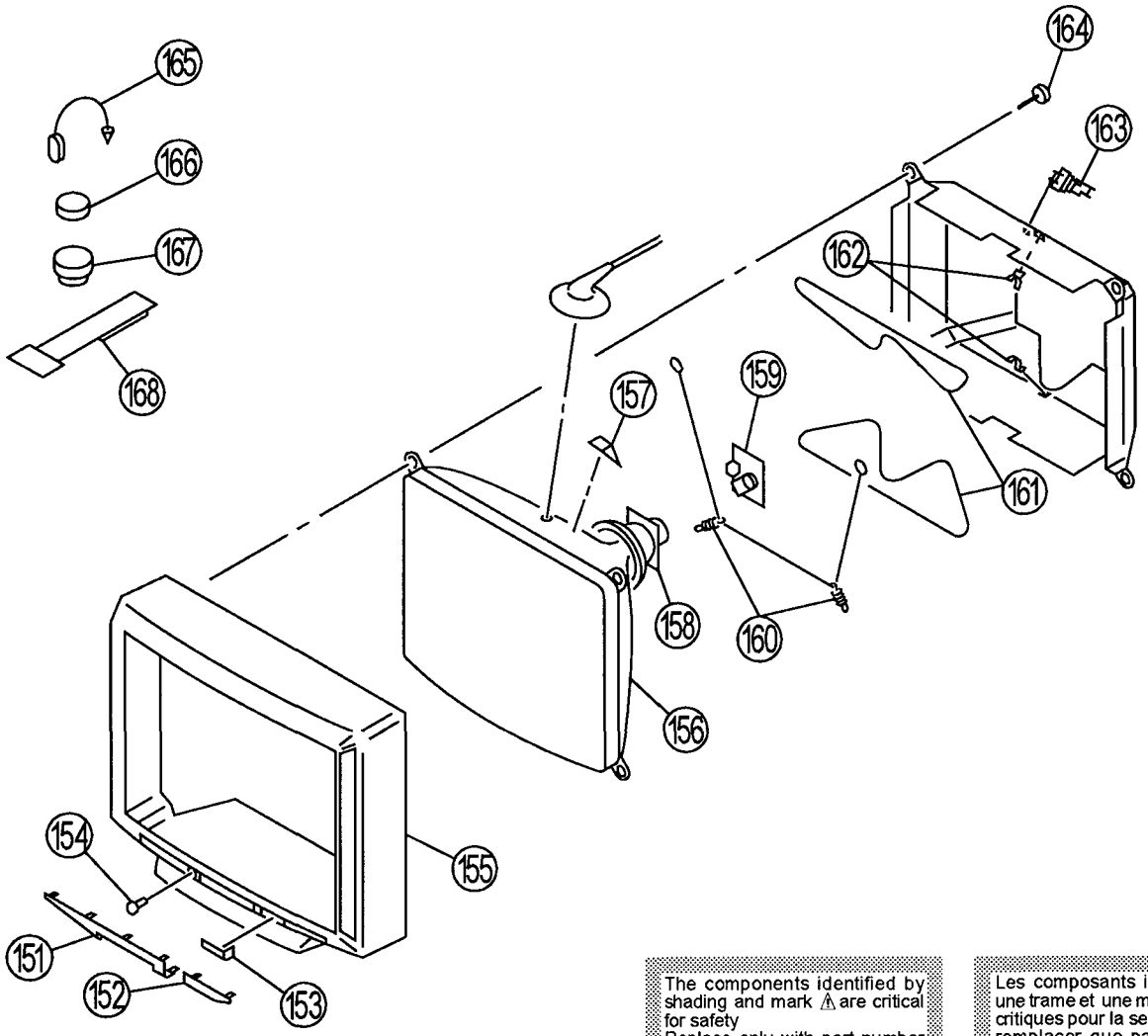


The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie

REF. NO		PART NO.	DESCRIPTION	REMARK
101		* A-1371-998-A	H BOARD, COMPLETE	
102		* A-1390-410-A	L BOARD, COMPLETE	
103		4-043-580-01	BUTTON, MULTI	
104		4-319-520-11	SCREW, SPECIAL (+PW4X30)	
105		* A-1346-201-A	D BOARD, COMPLETE	
106	⚠	1-453-146-11	TRANSFORMER ASSY, FLYBACK (NX-2604A3)	
107		* A-1297-233-A	A BOARD, COMPLETE	
108	⚠	8-598-254-00	TUNER BTF-WA402	
109	⚠	8-598-047-11	TUNER, ET BTF-LA401	
110		* 1-751-136-11	CAGLE, PIN	
111		* 1-751-135-11	CABLE, PIN	
112		1-417-178-11	SELECTOR, ANTENNA (AS-2)	
113		* A-1306-454-A	M BOARD, COMPLETE	
114		* A-1341-622-A	E BOARD, COMPLETE	
115		* A-1394-529-A	UA BOARD, COMPLETE	
116		* A-1195-062-A	P BOARD, COMPLETE	
117		A-1390-411-A	Z BOARD, COMPLETE	
118		4-039-517-11	PANEL, ANTENNA TERMINAL	
119		4-382-854-11	CCREW (M3X10), P, SW (+)	
120		4-039-834-01	LABEL, TERNINAL	
121	⚠	1-751-059-11	CORD, POWER (WITH CONNECTOR) 10A/125V	
122		4-043-579-01	COVER, REAR	
123		4-043-457-01	BAFFLE, SPEAKER	
124		1-504-524-11	SPEAKER (8CM)	
125		X-4032-226-1	COVER ASSY, SPEAKER	
126		4-046-160-01	EMBLEM (NO 9) SONY	

5-4. PICTURE TUBE (KV-32V16)



The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

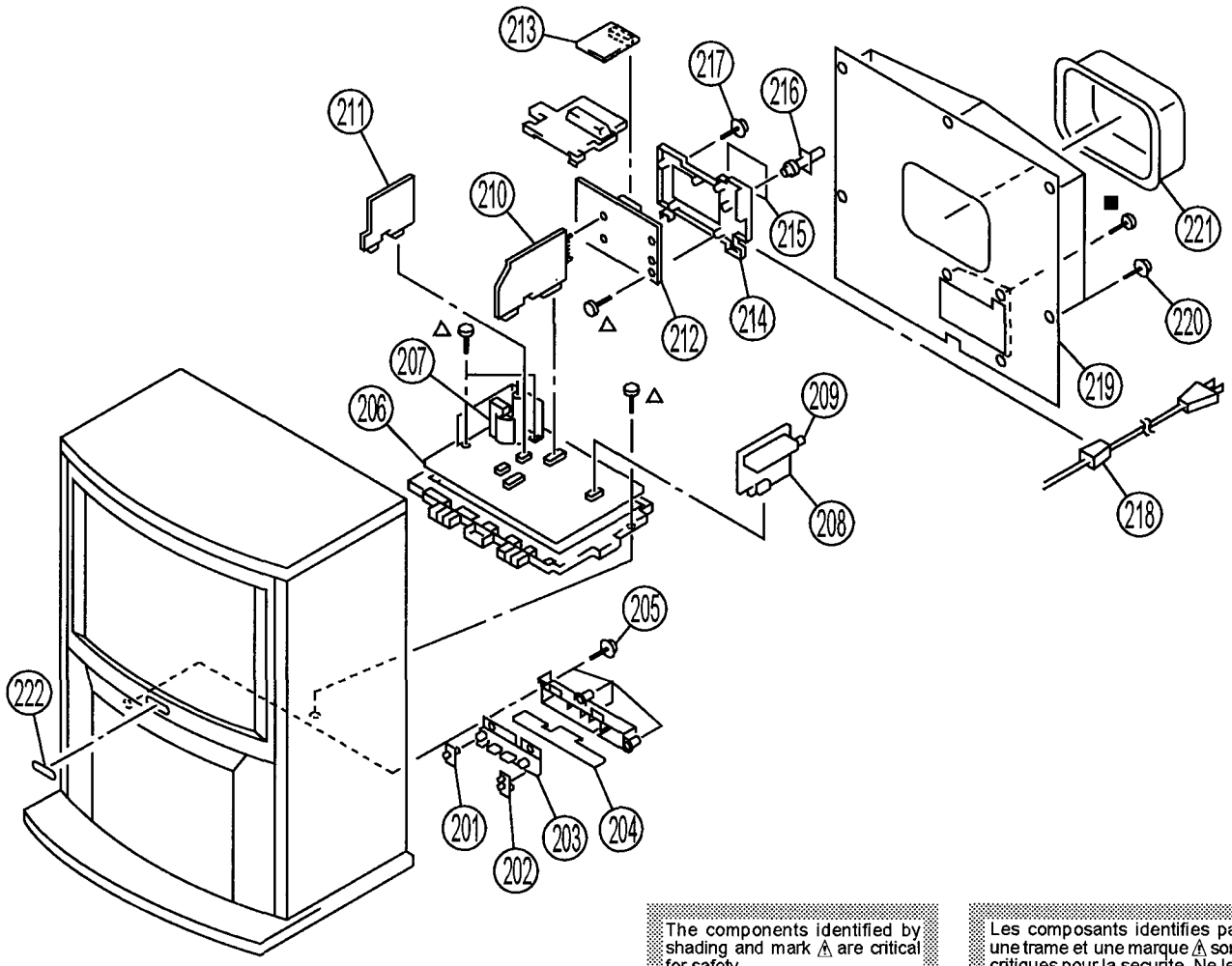
Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie

REF. NO		PART NO	DESCRIPTION	REMARK
151		4-043-659-01	PANEL (LEFT), CONTROL	
152		4-043-658-01	PANEL (RIGHT), CONTROL	
153		4-043-433-21	DOOR, CONTROL	
154	*	4-389-517-01	GUIDE (R), LIGHT	
155		4-043-578-01	BEZNET	
156	⚠	8-733-739-05	PICTURE TUBE (A60JYV51X)	
157		4-041-361-01	SPACER, DY	
158	⚠	8-451-315-41	DEFLECTION YOKE Y34FXA (VTM)	
159	*	A-1331-351-A	C BOARD, COMPLETE	
160		4-036-329-01	SPRING (B), TENSION	

REF. NO		PART NO	DESCRIPTION	REMARK
161	⚠	1-402-952-11	COIL, DEMAGNETIZATION	
162	*	4-371-629-01	STOPPER, WIRE	
163		4-033-681-01	HOLDER, LERD	
164		4-041-268-01	SCREW (7), TAPPING	
165		4-308-870-00	CLIP, LEAD WIRE	
166		1-452-032-00	MAGNET, DISK, 10MMø	
167		1-452-094-00	MAGNET, ROTATBLE DISK, 15MMø	
168		X-4306-312-0	PERMALLOY ASSY, CONVERGENCE	

5-5. CHASSIS (KV-32TW67/32TW68)

△ +BVTP 4x12 7-685-661-14
■ +BVTP 4x16 7-685-663-79



The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

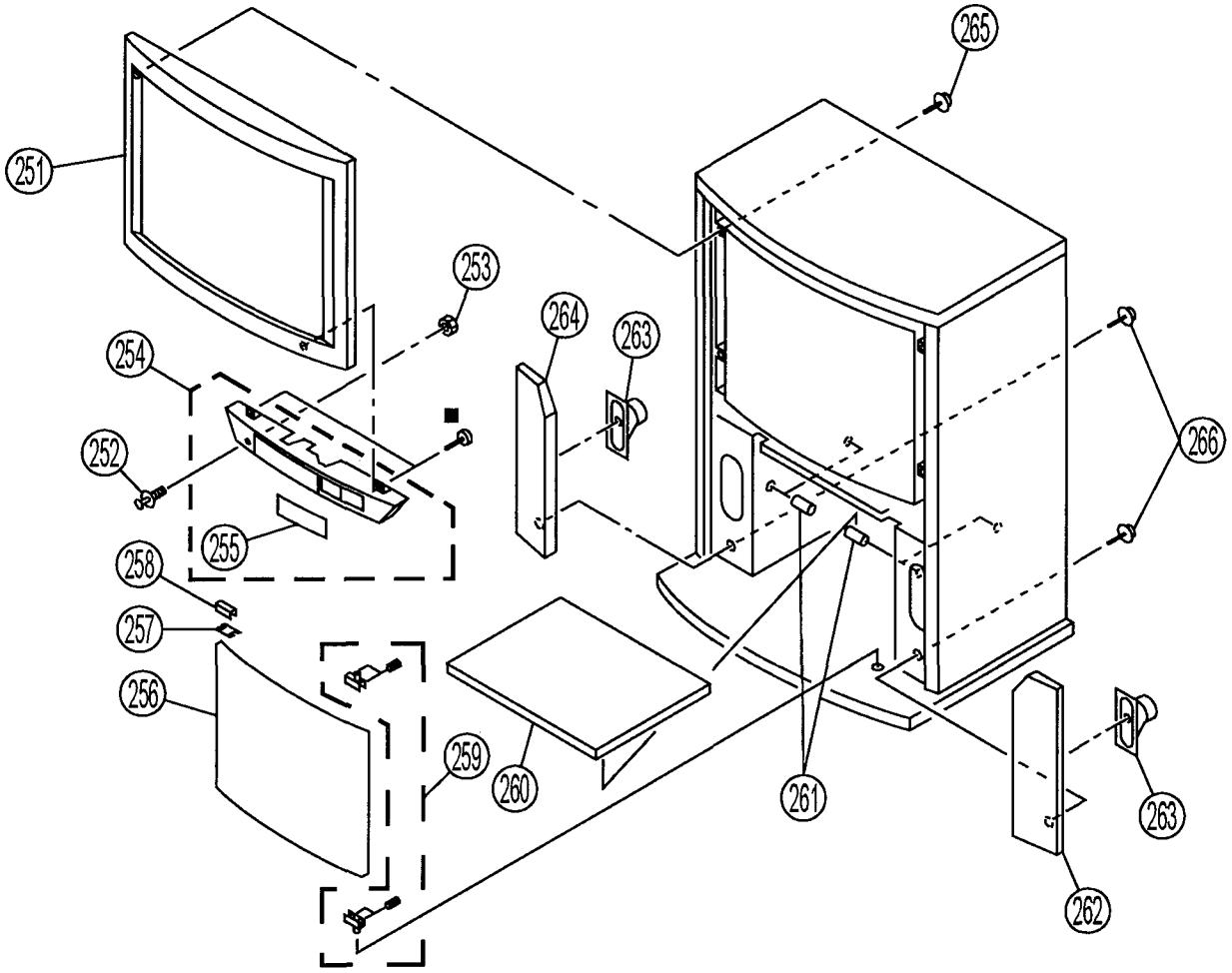
Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie

REF. NO	PART NO.	DESCRIPTION	REMARK
201	4-040-393-01	FILTER, REMOTE	
202	4-040-394-01	GUIDE, LED	
203	4-040-401-01	HOLDER, CHASSIS	
204	* A-1372-020-A	H BOARD, COMPLETE	
205	4-319-520-11	SCREW, SPECIAL (+PW4X30)	
206	* A-1346-193-A	D BOARD, COMPLETE	
207	⚠ 1-453-146-11	TRANSFORMER ASSY, FLYBACK (NX-2604A3)	
208	* A-1297-432-A	A BOARD, COMPLETE	
209	⚠ 8-598-254-00	TUNER BTF-WA402	
210	* A-1306-470-A	M BOARD, COMPLETE	
211	* A-1341-622-A	E BOARD, COMPLETE	

REF. NO	PART NO	DESCRIPTION	REMARK
212	* A-1394-415-A	UA BOARD, COMPLETE	
213	* A-1195-062-A	P BOARD, COMPLETE	
214	4-039-524-01	PANEL, ANTENNA TERMINAL	
215	4-039-834-01	LABEL,TERMINAL	
216	1-766-374-11	PLUG, F-PIN	
217	4-382-854-11	SCREW (M3X10), P, SW (+)	
218	⚠ 1-751-059-11	CORD, POWER (WITH CONNECTOR) 10A/125V	
219	4-040-523-01	BOARD, REAR	
220	4-378-522-01	SCREW, TAPPING, HEXAGON HEAD	
221	4-032-338-11	COVER, NECK	
222	3-704-179-01	EMBLEM (NO 9) SONY	

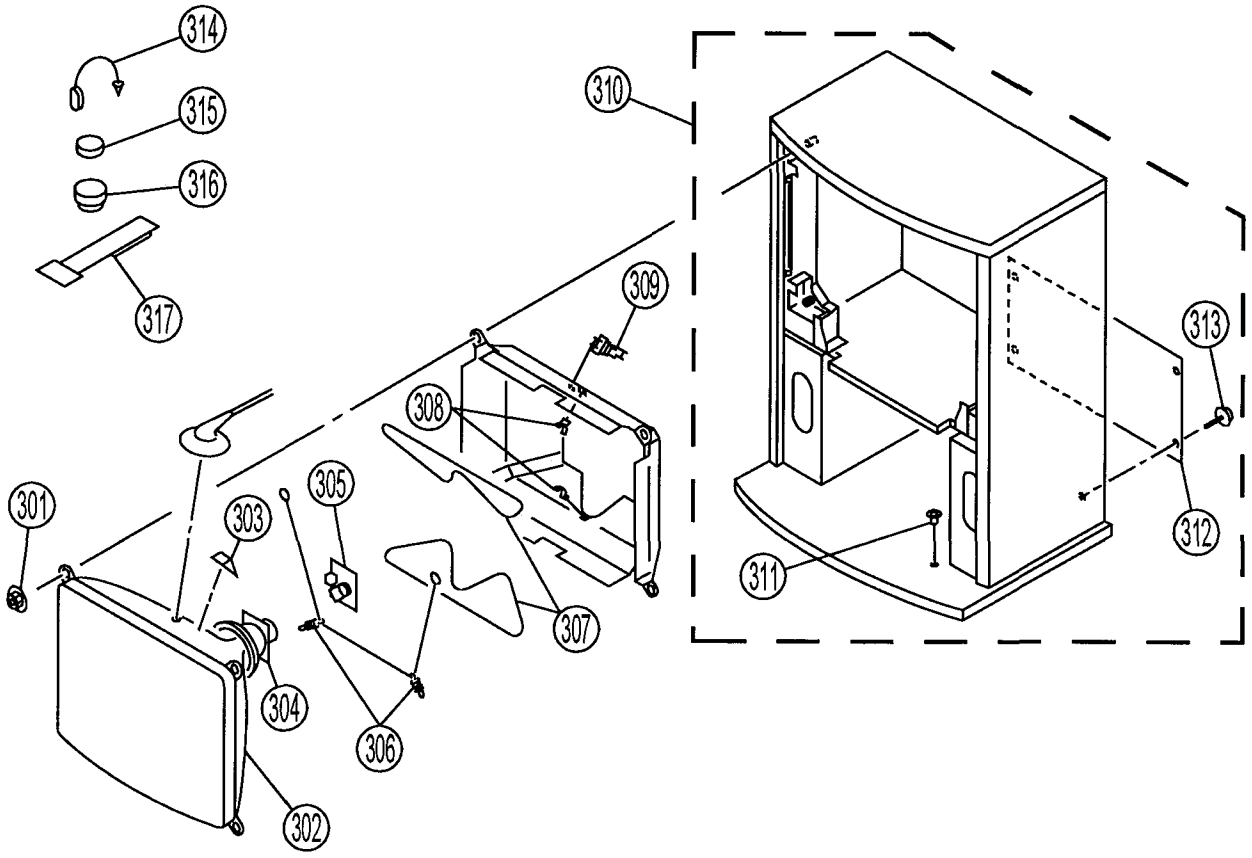
5-6. CONTROL PANEL (KV-32TW67/32TW68)

■ +BVTP 4x16 7-685-663-79



REF. NO	PART NO	DESCRIPTION	REMARK
251	4-032-337-11	BEZEL	
252	4-032-322-02	MAGNET, PUSH	
253	4-046-172-01	NUT, HEXAGON HEAD	
254	X-4031-160-1	PANEL ASSY, CONTROL	255
255	4-040-047-01	DOOR, CONTROL	
256	X-4031-138-1	DOOR ASSY, GLASS	
257	2-352-981-01	SPACER	
258	2-359-505-01	RETAINER, MAGNET	
259	4-041-362-01	HINGE SET	
260	X-4031-139-1	PLATE ASSY, RACK	
261	4-041-162-01	PIN, RACK	
262	X-4031-161-1	GRILLE ASSY (RIGHT), SPEAKER	
263	1-544-549-11	SPEAKER	
264	X-4031-162-1	GRILLE ASSY (LEFT), SPEAKER	
265	4-319-520-11	SCREW, SPECIAL (+PW4X30)	
266	4-384-096-01	SCREW (4X16), TAPPING, +P	

5-7. PICTURE TUBE (KV-32TW67/32TW68)



The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie.

REF. NO	PART NO	DESCRIPTION	REMARK
301	4-387-204-01	NUT, SPECIAL, CRT	
302	⚠ 8-733-739-05	PICTUER TUBE (A80JYV51X)	
303	4-041-361-01	SPACER, DY	
304	⚠ 8-451-315-41	DEFLECTION YOKE Y34FXA (VTM)	
305	* A-1331-351-A	C BOARD, COMPLETE	
306	4-033-329-01	BRACKET, MAIN	
307	⚠ 1-402-952-11	COIL, DEMAGNETIZATION	
308	4-371-629-01	STOPPER, WIRE	
309	4-033-681-01	HOLDER, LEAD	
310	* X-4031-163-1	CABINET ASSY (KV-32TW67)	311-313
	* X-4031-163-2	CABINET ASSY (KV-32TW68)	311-313

REF. NO	PART NO	DESCRIPTION	REMARK
311	2-112-350-01	BEARING	
312	4-040-389-01	BOARD, LOWER	
313	4-378-522-01	SCREW, TAPPING, HEXAGON HEAD	
314	4-308-870-00	CLIP, LEAD WIRE	
315	1-452-032-00	MAGNET, DISC, 10MMø	
316	1-452-094-00	MAGNET, ROTATABLE DISK, 15MMø	
317	X-4306-312-0	PERMALLOY ASSY, CONVERGENCE	

A M

SECTION 6
ELECTRICAL PARTS LIST

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie

- Items marked "★" are not stocked since they are seldom required for routine service Some delay should be anticipated when ordering these items
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted

RESISTORS
- All resistors are in ohms
- F nonflammable

When indicating ⚠ parts by reference number, please include the board name

CAPACITORS
- MF μF, PF μμF

COILS
- MMH mH, UH μH

- The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation Should replacement be required, replace only with the value originally used

REF. NO	PART NO	DESCRIPTION			REMARK
	* A-1297-221-A	A BOARD, COMPLETE (KV-32S12/KV32S16)			
		**********			
	* A-1297-233-A	A BOARD, COMPLETE (KV-32V16)			
		**********			
	* A-1297-432-A	A BOARD, COMPLETE (KV-32TW67/KV-32TW68)			
		**********			
		<CAPACITOR>			
C173	1-164-232-11	CERAMIC CHIP	0 01MF	10% 50V	
C174	1-164-232-11	CERAMIC CHIP	0 01MF	10% 50V	
C175	1-126-935-11	ELECT	470MF	20% 16V	
C176	1-126-935-11	ELECT	470MF	20% 16V	
C177	1-126-964-11	ELECT	10MF	20% 50V	
C178	1-126-933-11	ELECT	100MF	20% 16V	
C179	1-128-551-11	ELECT	22MF	20% 25V	
C180	1-128-551-11	ELECT	22MF	20% 25V	(KV-32V16)
C181	1-164-161-11	CERAMIC CHIP	0 0022MF	10% 50V	
C182	1-164-161-11	CERAMIC CHIP	0 0022MF	10% 50V	(KV-32V16)
C184	1-126-964-11	ELECT	10MF	20% 50V	(KV-32V16)
C185	1-126-964-11	ELECT	10MF	20% 50V	(KV-32V16)
		<CONNECTOR>			
CN103	* 1-564-519-11	PLUG, CONNECTOR 4P			
CN151	1-573-979-21	CONNECTOR, BOARD TO BOARD 11P			
CN152	1-766-774-11	CONNECTOR, BOARD TO BOARD 32P			
CN164	1-564-505-11	PLUG, CONNECTOR 2P			
CN165	1-564-505-11	PLUG, CONNECTOR 2P			
		<DIODE>			
D170	8-719-113-92	DIODE RD33ES-B1			
D175	8-719-113-92	DIODE RD33ES-B1 (KV-32V16)			
		<IC>			
IC172	8-759-932-67	IC BU4053BCF (KV-32V16)			
		<COIL>			
L170	1-408-408-00	INDUCTOR 8 2UH			
L171	1-408-408-00	INDUCTOR 8 2UH			
L172	1-408-408-00	INDUCTOR 8 2UH			
L173	1-408-408-00	INDUCTOR 8 2UH (KV-32V16)			
		<TRANSISTOR>			
Q172	8-729-424-02	TRANSISTOR	2SA1162-G (KV-32V16)		
Q173	8-729-424-02	TRANSISTOR	2SA1162-G (KV-32V16)		
		<RESISTOR>			
R170	1-216-025-91	METAL GLAZE	100	5% 1/10W (KV-32S12/32S16/32TW67/32TW68)	
R173	1-216-295-91	CONDUCTOR, CHIP		(2012)	(KV-32V16)
R174	1-216-689-11	METAL GLAZE	39K	5% 1/10W	
R175	1-215-900-11	METAL OXIDE	22K	5% 2W F	(KV-32V16)
R177	1-215-900-11	METAL OXIDE	22K	5% 2W F	
R179	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R181	1-216-025-91	METAL GLAZE	100	5% 1/10W	(KV-32V16)
R185	1-216-025-91	METAL GLAZE	100	5% 1/10W	(KV-32V16)
R187	1-216-083-00	METAL GLAZE	27K	5% 1/10W	
R188	1-216-689-11	METAL GLAZE	39K	5% 1/10W	(KV-32V16)
R189	1-216-083-00	METAL GLAZE	27K	5% 1/10W	(KV-32V16)
R190	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	(KV-32V16)
R191	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	(KV-32V16)
R193	1-216-037-00	METAL GLAZE	330	5% 1/10W (KV-32S12/32S16/32V16)	
R196	1-216-037-00	METAL GLAZE	330	5% 1/10W	(KV-32V16)
		<TUNER>			
TU101	⚠ 8-598-254-00	TUNER, BTF-WA402			
TU102	⚠ 8-598-047-11	TUNER, ET BTF-LA401 (KV-32V16)			

****

	* A-1306-454-A	M BOARD, COMPLETE (KV-32S12/32S16/32V16)		
		**********		
	* A-1306-470-A	M BOARD, COMPLETE (KV32TW67/32TW68)		
		**********		
		<CAPACITOR>		
C002	1-163-809-11	CERAMIC CHIP	0 047MF	10% 25V
C003	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C005	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C006	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C007	1-124-903-11	ELECT	1MF	20% 50V
C008	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C009	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C010	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C012	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C013	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C014	1-163-001-11	CERAMIC CHIP	220PF	10% 50V
C015	1-163-001-11	CERAMIC CHIP	220PF	10% 50V

M

REF. NO	PART NO.	DESCRIPTION			REMARK
C016	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C017	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C018	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C019	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C021	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C022	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C023	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C025	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C028	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C029	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C032	1-124-902-00	ELECT	0 47MF	20% 50V	
C033	1-126-933-11	ELECT	100MF	20% 10V	
C034	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
					(KV-32S12/32S16/32V16)
C035	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
					(KV-32S12/32S16/32V16)
C041	1-163-009-11	CERAMIC CHIP	0 001MF	10% 50V	
C043	1-163-159-00	CERAMIC CHIP	12PF	20% 50V	
					(KV-32TW67/32TW68)
C045	1-126-940-11	ELECT	330MF	20% 16V	
C047	1-104-896-11	CERAMIC CHIP	24PF	20% 50V	
					(KV-32TW67/32TW68)
C048	1-126-964-11	ELECT	10MF	20% 50V	
C049	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C050	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C051	1-163-031-11	CERAMIC CHIP	0 01MF	50V	
C052	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C053	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C054	1-163-125-00	CERAMIC CHIP	220PF	5% 50V	
C055	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C056	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C057	1-163-017-00	CERAMIC CHIP	0 0047MF	10% 50V	
C058	1-163-037-11	CERAMIC CHIP	0 022MF	10% 25V	
C059	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C060	1-124-903-11	ELECT	1MF	20% 50V	
C061	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
					(KV-32TW67/32TW68)
C062	1-126-964-11	ELECT	10MF	20% 50V	
C150	1-136-165-00	FILM	0 1MF	5% 50V	
C151	1-136-495-11	FILM	0 068MF	5% 50V	
C152	1-126-964-11	ELECT	10MF	20% 50V	
C153	1-137-367-11	FILM	0 0033MF	5% 50V	
C154	1-163-038-91	CERAMIC CHIP	0 1MF	25V	
C155	1-126-964-11	ELECT	10MF	20% 50V	
C156	1-163-135-00	CERAMIC CHIP	560PF	5% 50V	
C157	1-163-038-91	CERAMIC CHIP	0 1MF	25V	
C158	1-124-903-11	ELECT	1MF	20% 50V	
C160	1-124-903-11	ELECT	1MF	20% 50	
C201	1-163-017-00	CERAMIC CHIP	0 0047MF	10% 50V	
C202	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C203	1-163-989-11	CERAMIC CHIP	0 033MF	10% 25V	
C204	1-126-933-11	ELECT	100MF	20% 16V	
C205	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C211	1-163-989-11	CERAMIC CHIP	0 033MF	10% 25V	
C212	1-124-902-00	ELECT	0 47MF	20% 50V	
C213	1-124-902-00	ELECT	0 47MF	20% 50V	
C214	1-163-017-00	CERAMIC CHIP	0 0047MF	10% 50V	
C216	1-104-665-11	ELECT	100MF	20% 25V	

REF. NO	PART NO	DESCRIPTION			REMARK
C301	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C305	1-126-964-11	ELECT	10MF	20% 50V	
C306	1-124-902-00	ELECT	0 47MF	20% 50V	
C307	1-163-125-00	CERAMIC CHIP	220PF	5% 50V	
C308	1-163-099-00	CERAMIC CHIP	18PF	5% 50V	
C310	1-128-551-11	ELECT	22MF	20% 25V	
C311	1-124-903-11	ELECT	1MF	20% 50V	
C313	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
C315	1-126-964-11	ELECT	10MF	20% 50V	
C316	1-126-964-11	ELECT	10MF	20% 50V	
C317	1-126-964-11	ELECT	10MF	20% 50V	
C318	1-136-165-00	FILM	0 1MF	5% 50V	
C319	1-136-165-00	FILM	0 1MF	5% 50V	
C320	1-136-165-00	FILM	0 1MF	5% 50V	
C321	1-126-952-11	ELECT	1000MF	20% 16V	
C322	1-136-153-00	FILM	0 01MF	5% 50V	
C323	1-126-923-11	ELECT	220MF	20% 10V	
C324	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
C325	1-163-037-11	CERAMIC CHIP	0 022MF	10% 25V	
C326	1-136-169-00	FILM	0 22MF	5% 50V	
C327	1-136-169-00	FILM	0 22MF	5% 50V	
C328	1-124-902-00	ELECT	0 47MF	20% 50V	
C329	1-124-903-11	ELECT	1MF	20% 50V	
C330	1-126-964-11	ELECT	10MF	20% 50V	
C332	1-164-489-11	CERAMIC CHIP	0 22MF	10% 16V	
C333	1-163-011-11	CERAMIC CHIP	0 0015MF	10% 50V	
C334	1-124-902-00	ELECT	0 47MF	20% 50V	
C335	1-163-001-11	CERAMIC CHIP	220PF	10% 50V	
C336	1-124-903-11	ELECT	1MF	20% 50V	
C337	1-124-902-00	ELECT	0 47MF	20% 50V	
C338	1-136-153-00	FILM	0 01MF	5% 50V	
C340	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	
C342	1-106-359-00	MYLAR	0 0047MF	10% 100V	

<CONNECTOR>

CN129	* 1-564-521-11	PLUG, CONNECTOR 6P	
CN130	1-573-301-21	CONNECTOR, BOARD TO BOARD 20P	
CN131	* 1-691-914-11	CONNECTOR, BOARD TO BOARD 15P	
CN134	* 1-564-521-11	PLUG, CONNECTOR 6P	(KV-32S12/32S16/32V16)
CN137	1-750-394-11	PIN, CONNECTOR (STAKING) 32P	
CN138	* 1-564-512-11	PLUG, CONNECTOR 9P	
CN163	* 1-564-508-11	PLUG, CONNECTOR 5P	(KV-32S12/32S16/32V16)
CN168	1-564-505-11	PLUG, CONNECTOR 2P	

<DIODE>

D001	8-719-404-46	DIODE MA110
D002	8-719-404-46	DIODE MA110
D004	8-719-404-46	DIODE MA110
D005	8-713-300-57	DIODE 1T33
D006	8-719-110-17	DIODE RD10ESB2
D007	8-719-110-17	DIODE RD10ESB2
D008	8-719-110-17	DIODE RD10ESB2
D009	8-719-110-17	DIODE RD10ESB2
D150	8-719-404-46	DIODE MA110
D201	8-719-404-46	DIODE MA110

M

REF. NO	PART NO.	DESCRIPTION	REMARK
D202	8-719-404-46	DIODE MA110	
D205	8-719-110-17	DIODE RD10ESB2	
D206	8-719-110-17	DIODE RD10ESB2	
D301	8-719-110-17	DIODE RD10ESB2	
D304	8-719-110-17	DIODE RD10ESB2	
D308	8-719-110-17	DIODE RD10ESB2	
		<IC>	
IC101	8-752-851-01	IC CXP80424-079S (KV-32S12/32S16/32V16)	
IC101	8-752-856-00	IC CXP80424-084S (KV-32TW67/32TW68)	
IC102	8-759-280-74	IC ST24C02CB1	
IC103	8-759-805-37	IC L78LR05D-MA	
IC150	8-759-328-12	IC Z8622812PSC	
IC201	8-759-090-21	IC TDA8424	
IC202	8-759-983-69	IC LM358PS	
IC301	8-752-059-67	IC CXA1465AS	
		<CHIP CONDUCTOR>	
JR200	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR201	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR202	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR205	1-216-295-91	CONDUCTOR, CHIP (2012)	
		<COIL>	
L001	1-410-470-11	INDUCTOR 10UH	
L002	1-408-414-00	INDUCTOR 27UH	
		<TRANSISTOR>	
Q001	8-729-216-22	TRANSISTOR 2SA1162-G	
Q002	8-729-216-22	TRANSISTOR 2SA1162-G (KV-32TW67/32TW68)	
Q004	8-729-216-22	TRANSISTOR 2SA1162-G	
Q005	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q151	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q201	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q301	8-729-216-22	TRANSISTOR 2SA1162-G	
Q302	8-729-216-22	TRANSISTOR 2SA1162-G	
Q308	8-729-422-27	TRANSISTOR 2SD601A-Q	
		<RESISTOR>	
R002	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R003	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R004	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R005	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R006	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R007	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R008	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R009	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R011	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R012	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R013	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R016	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R017	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R018	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R019	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R020	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R021	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R022	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R023	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R025	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R026	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R027	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R028	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R029	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R030	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R031	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R032	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R033	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R034	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R035	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R036	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R037	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R038	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R039	1-216-295-91	CONDUCTOR, CHIP (2012)	
R040	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R041	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R042	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R043	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R044	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R045	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R046	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R047	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W (KV-32TW67/32TW68)	
R048	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R049	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R050	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R051	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R052	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R053	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R054	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R055	1-216-033-00	METAL GLAZE 220 5% 1/10W (KV-32S12/32S16/32V16)	
R056	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R057	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R058	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R059	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R060	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R062	1-216-057-00	METAL GLAZE 2 2K 5% 1/10W	
R063	1-216-033-00	METAL GLAZE 220 5% 1/10W (KV-32S12/32S16/32V16)	
R064	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R065	1-216-065-00	METAL GLAZE 4 7K 5% 1/10W	
R066	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R067	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R069	1-216-033-00	METAL GLAZE 220 5% 1/10W (KV-32S12/32S16/32V16)	
R070	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-32S12/32S16/32V16)	
R071	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-32S12/32S16/32V16)	
R074	1-216-295-91	CONDUCTOR, CHIP (2012)	

REF. NO	PART NO.	DESCRIPTION			REMARK
R075	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R076	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R078	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R079	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R080	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R082	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R083	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R086	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R087	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R089	1-216-083-00	METAL GLAZE	27K	5% 1/10W	
				(KV-32TW67/32TW68)	
R090	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
				(KV-32TW67/32TW68)	
R091	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R092	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R093	1-216-097-00	METAL GLAZE	100K	5% 1/10W	
				(KV-32S12/32S16/32V16)	
R093	1-216-295-91	CONDUCTOR, CHIP		(2012)	
				(KV-32TW67/32TW68)	
R150	1-216-097-00	METAL GLAZE	100K	5% 1/10W	
R151	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R152	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R153	1-216-069-00	METAL GLAZE	6 8K	5% 1/10W	
R154	1-216-041-00	METAL GLAZE	470	5% 1/10W	
R155	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R156	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R157	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R158	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R159	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R160	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R161	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R162	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R163	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R164	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R165	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R166	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R168	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R201	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R202	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R203	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R204	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R205	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R206	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R207	1-216-085-00	METAL GLAZE	33K	5% 1/10W	
R208	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R209	1-216-085-00	METAL GLAZE	33K	5% 1/10W	
R210	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R211	1-216-033-00	METAL GLAZE	220	5% 1/10W	
R212	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R213	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R218	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R219	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R220	1-216-033-00	METAL GLAZE	220	5% 1/10W	
R222	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R223	1-216-045-00	METAL GLAZE	680	5% 1/10W	
R301	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R302	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R303	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	

REF. NO	PART NO	DESCRIPTION			REMARK
R304	1-216-039-00	METAL GLAZE	390	5% 1/10W	
R305	1-216-039-00	METAL GLAZE	390	5% 1/10W	
R306	1-216-057-00	METAL GLAZE	2 2K	5% 1/10W	
R312	1-216-119-00	METAL GLAZE	820K	5% 1/10W	
R313	1-216-079-00	METAL GLAZE	18K	5% 1/10W	
R321	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R323	1-216-041-00	METAL GLAZE	470	5% 1/10W	
R324	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R327	1-208-784-11	METAL CHIP	1 2K	0 50%	1/10W
R328	1-216-033-00	METAL GLAZE	220	5% 1/10W	
R329	1-216-033-00	METAL GLAZE	220	5% 1/10W	
R330	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R331	1-216-678-11	METAL CHIP	13K	0 50%	1/10W
R332	1-216-057-00	METAL GLAZE	2 2K	5% 1/10W	
R333	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R334	1-216-687-11	METAL CHIP	33K	0 50%	1/10W
R335	1-216-121-00	METAL GLAZE	1M	5% 1/10W	
R336	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R337	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R338	1-249-417-11	CARBON	1K	5% 1/4W	F
R339	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R340	1-216-077-00	METAL GLAZE	15K	5% 1/10W	
R341	1-216-085-00	METAL GLAZE	33K	5% 1/10W	
R342	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R343	1-216-053-00	METAL GLAZE	1 5K	5% 1/10W	
R344	1-216-043-91	METAL GLAZE	560	5% 1/10W	
R345	1-216-109-00	METAL GLAZE	330K	5% 1/10W	
R346	1-216-071-00	METAL GLAZE	8 2K	5% 1/10W	
R347	1-249-409-11	CARBON	220	5% 1/4W	F
R348	1-216-097-00	METAL GLAZE	100K	5% 1/10W	
R349	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R351	1-216-065-00	MTAL GLAZE	4 7K	5% 1/10W	
R352	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R354	1-216-033-00	METAL GLAZE	220	5% 1/10W	
R356	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R374	1-216-033-00	METAL GLAZE	220	5% 1/10W	
R375	1-216-033-00	METAL GLAZE	220	5% 1/10W	

<CRYSTAL>

X001	1-567-775-11	VIBRATOR, CERAMIC
X301	1-567-505-11	OSCILLATOR, CRYSTAL

****

* A-1346-193-A D BOARD, COMPLETE
****
(KV-32S12/32S16/32TW67/32TW68)

* A-1346-201-A D BOARD, COMPLETE (KV-32V16)
****

1-533-223-11	HOLDER, FUSE
4-382-854-11	SCREW (M3X10), P, SW (+)

<CAPACITOR>

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

D

REF. NO		PART NO	DESCRIPTION				REMARK
C501		1-126-942-61	ELECT	1000MF	20%	25V	
C502		1-162-131-11	CERAMIC	220PF	10%	2KV	
C503		1-126-942-61	ELECT	1000MF	20%	25V	
C504		1-137-366-11	FILM	0 0022MF	5%	50V	
C505		1-128-551-11	ELECT	22MF	20%	25V	
C506		1-128-560-11	ELECT	22MF	20%	100V	
C509		1-128-551-11	ELECT	22MF	20%	25V	
C510		1-106-387-00	MYLAR	0 068MF	10%	200V	
C511		1-123-024-21	ELECT	33MF		160V	
C512		1-102-212-00	CERAMIC	820PF	10%	500V	
C513		1-102-212-00	CERAMIC	820PF	10%	500V	
C514		1-102-244-00	CERAMIC	220PF	10%	500V	
C515		1-106-367-00	MYLAR	0 01MF	10%	100V	
C517		1-162-116-00	CERAMIC	680PF	10%	2KV	
C518		1-162-116-00	CERAMIC	680PF	10%	2KV	
C519	⚠	1-104-771-11	FILM	0.02MF	3%	2KV	
C520	⚠	1-162-134-91	CERAMIC	470PF	10%	2KV	
C521	⚠	1-136-316-51	FILM	0.056MF	5%	630V	
C522		1-106-383-00	MYLAR	0 047MF	10%	200V	
C523		1-102-002-00	CERAMIC	680PF	10%	500V	
C524		1-102-212-00	CERAMIC	820PF	10%	500V	
C525		1-124-902-00	ELECT	0 47MF	20%	50V	
C526		1-106-395-00	MYLAR	0 15MF	10%	200V	
C527		1-109-956-11	ELECT	1MF	20%	200V	
C528		1-136-113-00	FILM	2MF	5%	200V	
C529		1-106-343-00	MYLAR	0 001MF	10%	100V	
C530		1-104-770-11	FILM	0 62MF	5%	200V	
C531		1-104-664-11	ELECT	47MF	20%	25V	
C532		1-136-165-00	FILM	0 1MF	5%	50V	
C533		1-124-927-11	ELECT	4 7MF	20%	50V	
C534		1-136-161-00	FILM	0 047MF	5%	50V	
C535		1-126-969-11	ELECT	220MF	20%	50V	
C536		1-108-702-11	MYLAR	0 068MF	10%	100V	
C537		1-126-964-11	ELECT	10MF	20%	50V	
C538		1-136-161-00	FILM	0 047MF	5%	50V	
C540		1-137-366-11	FILM	0 0022MF	5%	50V	
C541		1-137-366-11	FILM	0 0022MF	5%	50V	
C542		1-130-481-00	FILM	0 0068MF	5%	50V	
C545		1-124-927-11	ELECT	4 7MF	20%	50V	
C547		1-164-079-11	CERAMIC	330PF	10%	50V	
C548	⚠	1-162-116-91	CERAMIC	680PF	10%	2KV	
C553		1-164-079-11	CERAMIC	330PF	10%	50V	
C561		1-162-815-11	CERAMIC	47PF	5%	500V	
C595		1-107-635-11	ELECT	4 7MF	20%	160V	
C598		1-109-959-91	ELECT	3 3MF	20%	160V	
C600		1-126-964-11	ELECT	10MF	20%	50V	
C601	⚠	1-136-311-51	FILM	0.47MF	20%	125V	
C602	⚠	1-136-311-51	FILM	0.47MF	20%	125V	
C604	⚠	1-162-578-81	CERAMIC	0.0047MF	20%	400V	
C607		1-125-735-11	ELECT	470MF	20%	200V	
C608		1-125-735-11	ELECT	470MF	20%	200V	
C609		1-137-378-11	FILM	0 22MF	5%	50V	
C610		1-136-169-00	FILM	0 22MF	5%	50V	
C611		1-136-169-00	FILM	0 22MF	5%	50V	
C612		1-136-169-00	FILM	0 22MF	5%	50V	
C613		1-164-625-11	CERAMIC	680PF	10%	500V	
C614		1-164-625-11	CERAMIC	680PF	10%	500V	
C616		1-126-964-11	ELECT	10MF	20%	50V	
C617		1-126-953-11	ELECT	2200MF	20%	35V	
C618		1-126-942-61	ELECT	1000MF	20%	25V	
C619		1-126-952-11	ELECT	1000MF	20%	16V	
C620		1-164-644-11	CERAMIC	330PF	10%	500V	
C621		1-126-356-11	ELECT	220MF	20%	160V	
C623		1-102-030-00	CERAMIC	330PF	10%	500V	
C624		1-136-155-00	FILM	0 015MF	5%	50V	
C625		1-129-719-00	FILM	0 027MF	10%	400V	
C626		1-104-665-11	ELECT	100MF	20%	25V	
C634		1-165-127-11	CERAMIC	470PF	10%	500V	
C635		1-126-967-11	ELECT	47MF	20%	16V	
C636		1-137-374-11	FILM	0 047MF	5%	50V	
C637		1-128-551-11	ELECT	22MF	20%	25V	
C639		1-161-740-00	CERAMIC	470PF	10%	400V	
C641		1-126-933-11	ELECT	100MF	20%	10V	
C642		1-137-217-11	FILM	0 01MF	5%	0	
C643		1-137-218-11	FILM	0 012MF	5%	0	
C645		1-102-125-00	CERAMIC	0 0047MF	10%	50V	
C646		1-126-933-11	ELECT	100MF	20%	16V	
C647		1-128-551-11	ELECT	22MF	20%	25V	
C684		1-124-667-11	ELECT	10MF	20%	50V	
C695		1-126-964-11	ELECT	10MF	20%	50V	
C2205		1-124-925-11	ELECT	2 2MF	20%	50V	
C2208		1-124-925-11	ELECT	2 2MF	20%	50V	
C2210		1-104-666-11	ELECT	220MF	20%	25V	
C2211		1-104-664-11	ELECT	47MF	20%	25V	
C2212		1-104-666-11	ELECT	220MF	20%	25V	
C2213		1-136-173-00	FILM	0 47MF	5%	50V	
C2215		1-136-169-00	FILM	0 22MF	5%	50V	
C2216		1-126-941-11	ELECT	470MF	20%	25V	
C2217		1-136-169-00	FILM	0 22MF	5%	50V	
C2218		1-126-942-61	ELECT	1000MF	20%	25V	
C2219		1-126-942-61	ELECT	1000MF	20%	25V	
C2220		1-124-925-11	ELECT	2 2MF	20%	50V	

<CONNECTOR>

CN104		1-573-979-21	CONNECTOR, BOARD TO BOARD 11P	
CN105	*	1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P	
CN107	*	1-580-798-11	CONNECTORPIN (DY) 6P	
CN108	*	1-573-296-21	CONNECTOR, BOARD TO BOARD 10P	
CN109	*	1-573-296-21	CONNECTOR, BOARD TO BOARD 10P	
CN113	*	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN114	*	1-580-843-11	PIN, CONNECTOR (POWER)	
CN115		1-573-298-21	CONNECTOR, BOARD TO BOARD 20P	
CN116	*	1-691-915-11	CONNECTOR, BOARD TO BOARD 15P	
CN117		1-573-978-21	CONNECTOR, BOARD TO BOARD 11P	

<DIODE>

D501		8-719-028-72	DIODE RGP02-17EL-6433	
D502		8-719-979-85	DIODE EGP20G-PKG23	
D503		8-719-979-85	DIODE EGP20G-PKG23	
D504	⚠	8-719-302-44	DIODE EL1Z	
D505		8-719-302-43	DIODE EL1Z	

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D

REF. NO	PART NO.	DESCRIPTION	REMARK
D506	8-719-945-80	DIODE ERC06-15S	
D507	8-719-945-80	DIODE ERC06-15S	
D508	8-719-900-26	DIODE ERD29-08J	
D509	8-719-302-43	DIODE EL1Z	
D510	8-719-908-03	DIODE GP08D	
D511	8-719-908-03	DIODE GP08D	
D512	8-719-109-84	DIODE RD5 1ESB1	
D513	8-719-908-03	DIODE GP08D	
D514	8-719-911-19	DIODE 1SS119-25	
D515	8-719-911-19	DIODE 1SS119-25	
D601	8-719-911-19	DIODE 1SS119-25	
D602 ⚠	8-719-510-63	DIODE D4SB60L	
D603	8-719-500-69	DIODE S3V10SS	
D605	8-719-500-69	DIODE S3V10SS	
D607	8-719-510-02	DIODE D1NS4	
D608	8-719-510-02	DIODE D1NS4	
D609	8-719-510-02	DIODE D1NS4	
D610	8-719-510-02	DIODE D1NS4	
D611	8-719-510-02	DIODE D1NS4	
D612	8-719-031-79	DIODE D5SC4M	
D613	8-719-022-97	DIODE D2S4MF	
D614	8-719-110-33	DIODE RD12ESB3	
D615	8-719-027-43	DIODE S2L20UF	
D616	8-719-027-43	DIODE S2L20UF	
D617	8-719-027-43	DIODE S2L20UF	
D618	8-719-027-43	DIODE S2L20UF	
D619	8-719-510-02	DIODE D1NS4	
D622	8-719-911-19	DIODE 1SS119-25	
D623	8-719-911-19	DIODE 1SS119-25	
D624	8-719-911-19	DIODE 1SS119-25	
D626	8-719-510-48	DIODE D1N20R	
D627	8-719-510-48	DIODE D1N20R	
D628	8-719-911-19	DIODE 1SS119-25	
D633	8-719-110-09	DIODE RD8 2ESB3	
D634	8-719-911-19	DIODE 1SS119-25	
D635	8-719-911-19	DIODE 1SS119-25	
D636	8-719-510-48	DIODE D1N20R	
D637	8-719-911-19	DIODE 1SS119-25	
D638	8-719-911-19	DIODE 1SS119-25	
		<FUSE>	
F601 ⚠	1-576-193-11	FUSE 6 3A/125V	
	1-533-223-11	HOLDER, FUSE, F601	
		<FERRITE BEAD>	
FB501	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB502	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB601	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB602	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB603	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB604	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB605	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB606	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB613	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB614	1-412-911-11	INDUCTOR, FERRITE BEAD	

REF. NO	PART NO	DESCRIPTION			REMARK
		<IC>			
IC501	8-759-980-58	IC TDA8172			
IC504	8-759-103-93	IC UPC393C			
IC601 ⚠	1-810-477-11	POWER MODULE DM-48			
IC604	8-759-231-53	IC TA7805S			
IC605	8-759-231-58	IC TA7812S			
IC606	8-759-701-59	IC NJM78M09FA			
IC610	8-759-708-05	IC NJM78L05A			
IC2200	8-759-980-43I	IC TDA2009A			
		<COIL>			
L502	1-421-465-00	COIL, FERRITE CHOKE 68UH			
L503	1-412-524-11	INDUCTOR 8 2UH			
L504	1-410-669-31	INDUCTOR 33UH			
L505	1-459-104-00	COIL, WITH CORE			
L506	1-410-396-41	FERRITE BEAD INDUCTOR 0 45UH			
L508	1-412-553-11	INDUCTOR 3 3MMH			
L509 ⚠	1-409-861-21	COIL HORIZONTAL LINEARITY			
L510	1-411-189-11	COIL, CHOKE 15MMH			
L513	1-412-524-11	INDUCTOR 8 2UH			
		<PROTECTOR MODULE>			
PM501	1-810-061-21	PROTECTOR MODULE PM-39			
		<IC LINK>			
PS2201 ⚠	1-532-675-91	LINK, IC 1 5A			
		<TRANSISTOR>			
Q502	8-729-119-80	TRANSISTOR	2SC2688-LK		
Q503	8-729-809-29	TRANSISTOR	2SC4159-E		
Q505	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q591	8-729-016-32	TRANSISTOR	2SC4927-01		
Q601	8-729-019-49	TRANSISTOR	2SC4834M		
Q602	8-729-019-49	TRANSISTOR	2SC4834M		
Q603	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q604	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q605	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q611	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q613	8-729-024-95	TRANSISTOR	2SB1565EF		
Q614	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q2202	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q2203	8-729-119-76	TRANSISTOR	2SA1175-HFE		
		<RESISTOR>			
R501	1-249-444-11	CARBON	0 56	5%	1/4W F
R503	1-215-862-11	METAL OXIDE	68	5%	1W F
R504	1-215-872-11	METAL OXIDE	3 3K	5%	1W F
R505	1-249-443-11	CARBON	0 47	5%	1/4W F
R506	1-215-886-11	METAL OXIDE	100	5%	2W F
R507	1-249-429-11	CARBON	10K	5%	1/4W
R508	1-249-425-11	CARBON	4 7K	5%	1/4W

• The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation Should replacement be required, replace only with the value originally used

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

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REF. NO	PART NO	DESCRIPTION			REMARK
R509	1-249-389-11	CARBON	4 7	5% 1/4W F	
⧓R511 ⚠		CARBON		1/4W	
R512	1-249-389-11	CARBON	4 7	5% 1/4W F	
R513	1-216-385-11	METAL OXIDE	0 47	5% 3W F	
R514	1-249-429-11	CARBON	10K	5% 1/4W	
R516	1-249-401-11	CARBON	47	5% 1/4W	
R517	1-215-892-11	METAL OXIDE	1K	5% 2W F	
R518	1-215-892-11	METAL OXIDE	1K	5% 2W F	
R519	1-249-426-11	CARBON	5 6K	5% 1/4W F	
R520	1-249-423-11	CARBON	3 3K	5% 1/4W	
R521	1-249-411-11	CARBON	330	5% 1/4W	
R522	1-215-886-11	METAL OXIDE	100	5% 2W F	
R523	1-215-862-11	METAL OXIDE	68	5% 1W F	
⧓R524 ⚠		CARBON		1/4W	
R526	1-247-887-00	CARBON	220K	5% 1/4W	
R527	1-215-861-00	METAL OXIDE	47	5% 1W F	
R528	1-247-750-11	CARBON	680	5% 1/2W F	
R530	1-215-445-00	METAL	10K	1% 1/4W	
R531	1-247-903-00	CARBON	1M	5% 1/4W	
R532	1-215-446-00	METAL	11K	1% 1/4W	
R534	1-249-385-11	CARBON	2 2	5% 1/4W F	
R535	1-216-453-00	METAL OXIDE	270	5% 2W F	
R536	1-249-389-11	CARBON	4 7	5% 1/4W F	
R539	1-215-459-00	METAL	39K	1% 1/4W	
R543	1-249-419-11	CARBON	1 5K	5% 1/4W	
R546	1-249-431-11	CARBON	15K	5% 1/4W	
R547	1-247-883-00	CARBON	150K	5% 1/4W	
R554	1-216-371-00	METAL OXIDE	1 5	5% 2W F	
R556	1-249-411-11	CARBON	330	5% 1/4W	
R557	1-249-415-11	CARBON	680	5% 1/4W F	
R561	1-249-429-11	CARBON	10K	5% 1/4W	
R562	1-215-437-00	METAL	4 7K	1% 1/4W	
R563	1-249-429-11	CARBON	10K	5% 1/4W	
R564	1-247-863-91	CARBON	22K	5% 1/4W	
R566	1-249-435-11	CARBON	33K	5% 1/4W	
R580	1-249-411-11	CARBON	330	5% 1/4W	
R602 ⚠	1-202-723-91	SOLID	2.2M	20% 1/2W	
R603	1-249-419-11	CARBON	1 5K	5% 1/4W	
R605	1-247-893-11	CARBON	390K	5% 1/4W	
R606	1-247-893-11	CARBON	390K	5% 1/4W	
R607 ⚠	1-202-933-61	FUSIBLE	0.1	10% 1/2W F	
R608	1-215-860-11	METAL OXIDE	33	5% 1W F	
R609	1-216-349-00	METAL OXIDE	1	5% 1W F	
R610	1-216-369-00	METAL OXIDE	1	5% 2W F	
R611	1-216-492-11	METAL OXIDE	82K	5% 3W F	
R613	1-215-883-11	METAL OXIDE	33	5% 2W F	
R614	1-215-883-11	METAL OXIDE	33	5% 2W F	
R615	1-249-421-11	CARBON	2 2K	5% 1/4W	
R616	1-249-417-11	CARBON	1K	5% 1/4W	
R617	1-249-377-11	CARBON	0 47	5% 1/4W F	
R618	1-249-377-11	CARBON	0 47	5% 1/4W F	
R619	1-249-377-11	CARBON	0 47	5% 1/4W F	
R621	1-249-377-11	CARBON	0 47	5% 1/4W F	
R622	1-249-377-11	CARBON	0 47	5% 1/4W F	
R623	1-249-377-11	CARBON	0 47	5% 1/4W F	
R624	1-249-377-11	CARBON	0 47	5% 1/4W F	

REF. NO	PART NO	DESCRIPTION			REMARK
R625	1-249-377-11	CARBON	0 47	5% 1/4W F	
R627	1-249-377-11	CARBON	0 47	5% 1/4W F	
R628	1-249-377-11	CARBON	0 47	5% 1/4W F	
R629	1-249-388-11	CARBON	3 9	5% 1/4W F	
R630	1-215-857-11	METAL OXIDE	10	5% 1W F	
R632	1-249-417-11	CARBON	1K	5% 1/4W F	
R633	1-249-405-11	CARBON	100	5% 1/4W F	
R635	1-249-413-11	CARBON	470	5% 1/4W F	
R636	1-249-383-11	CARBON	1 5	5% 1/4W F	
R637	1-249-421-11	CARBON	2 2K	5% 1/4W	
R638	1-249-423-11	CARBON	3 3K	5% 1/4W	
R639	1-249-423-11	CARBON	3 3K	5% 1/4W	
R640 ⚠	1-202-730-91	SOLID	8.2M	20% 1/2W	
R643	1-216-399-00	METAL OXIDE	6 8	5% 3W F	
R644 ⚠	1-212-853-61	FUSIBLE	6.8	5% 1/4W F	
R645	1-249-377-11	CARBON	0 47	5% 1/4W F	
R646	1-249-429-11	CARBON	10K	5% 1/4W	
R647	1-247-863-91	CARBON	22K	5% 1/4W	
R648	1-249-414-11	CARBON	560	5% 1/4W	
R649	1-216-431-11	METAL OXIDE	560	5% 1W F	
R650	1-249-405-11	CARBON	100	5% 1/4W F	
R653	1-249-381-11	CARBON	1	5% 1/4W	
R654	1-216-385-11	METAL OXIDE	0 47	5% 3W F	
R655	1-249-417-11	CARBON	1K	5% 1/4W F	
R656	1-249-381-11	CARBON	1	5% 1/4W	
R657	1-249-417-11	CARBON	1K	5% 1/4W	
R658	1-249-389-11	CARBON	4 7	5% 1/4W F	
R659	1-247-883-00	CARBON	150K	5% 1/4W	
R660	1-247-863-91	CARBON	22K	5% 1/4W	
R661	1-249-406-11	CARBON	120	5% 1/4W	
R662	1-249-393-11	CARBON	10	5% 1/4W	
R663	1-247-737-11	CARBON	68	5% 1/2W F	
R689	1-215-861-00	METAL OXIDE	47	5% 1W F	(KV-32V16)
R690	1-249-423-11	CARBON	3 3K	5% 1/4W	
R691	1-249-423-11	CARBON	3 3K	5% 1/4W	
R693	1-216-371-00	METAL OXIDE	1 5	5% 2W F	
R699	1-216-492-11	METAL OXIDE	82K	5% 3W F	
R2209	1-249-427-11	CARBON	6 8K	5% 1/4W	
R2210	1-249-435-11	CARBON	33K	5% 1/4W	
R2211	1-249-427-11	CARBON	6 8K	5% 1/4W	
R2212	1-249-435-11	CARBON	33K	5% 1/4W	
R2215	1-249-425-11	CARBON	4 7K	5% 1/4W	
R2216	1-249-437-11	CARBON	47K	5% 1/4W	
R2217	1-249-435-11	CARBON	33K	5% 1/4W	
R2218	1-249-441-11	CARBON	100K	5% 1/4W	
R2219	1-249-413-11	CARBON	470	5% 1/4W	
R2220	1-249-430-11	CARBON	12K	5% 1/4W	
R2221	1-249-430-11	CARBON	12K	5% 1/4W	
R2222	1-249-398-11	CARBON	27	5% 1/4W	
R2223	1-249-418-11	CARBON	1 2K	5% 1/4W	
R2224	1-249-418-11	CARBON	1 2K	5% 1/4W	
R2225	1-249-398-11	CARBON	27	5% 1/4W	
R2226	1-249-385-11	CARBON	2 2	5% 1/4W F	
R2227	1-249-385-11	CARBON	2 2	5% 1/4W F	
R2228	1-249-421-11	CARBON	2 2K	5% 1/4W	
R2229	1-249-421-11	CARBON	2 2K	5% 1/4W	

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Replace only with part number specified

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REF. NO	PART NO	DESCRIPTION			REMARK
		<RELAY>			
RY601 ⚠	1-515-516-00	RELAY			
RY602	1-515-516-00	RELAY			
		<SWITCH>			
S501	1-572-707-11	SWITCH, LEVER			
S502	1-572-707-11	SWITCH, LEVER			
		<TRANSFORMER>			
T501 ⚠	1-453-146-11	TRANSFORMER ASSY, FLYBACK (NX-2604A3)			
T502 ⚠	1-437-195-21	TRANSFORMER, HORIZONTAL DRIVE			
T503 ⚠	1-424-545-22	TRANSFORMER, FERRITE (PMT)			
T601 ⚠	1-423-593-11	TRANSFORMER, LINE FILTER (LFT)			
T602 ⚠	1-424-220-21	TRANSFORMER, LINE FILTER			
T603 ⚠	1-423-563-11	TRANSFORMER, CONVERTER DRIVE			
T604 ⚠	1-423-615-11	TRANSFORMER, CONVERTER (PIT)			
T605	1-426-669-11	TRANSFORMER, CONVERTER (SBT)			
		<THERMISTOR>			
THP601 ⚠	1-809-539-11	THERMISTOR, POSITIVE			
		<VARISTOR>			
VDR601	1-807-288-11	VARISTOR			
VDR602	1-810-053-11	VARISTOR			
VDR603	1-810-053-11	VARISTOR			
	* A-1372-020-A	H BOARD, COMPLETE (KV-32TW67/32TW68)			
	* A-1371-994-A	H BOARD, COMPLETE (KV-32S12/32S16)			
	* A-1371-998-A	H BOARD, COMPLETE (KV-32V16)			
		<CAPACITOR>			
C1001	1-124-248-00	ELECT	22MF	20% 25V	
C1002	1-126-160-11	ELECT	1MF	20% 50V	
C1003	1-126-160-11	ELECT	1MF	20% 50V	
C1004	1-124-584-00	ELECT	100MF	20% 10V	
C1010	1-124-465-00	ELECT	0 47MF	20% 50V	(KV-32V16)
		<CONNECTOR>			
CN154	* 1-564-520-11	PLUG, CONNECTOR 5P			
CN155	1-564-524-11	PLUG, CONNECTOR 9P			
CN156	* 1-564-518-11	PLUG, CONNECTOR 3P			(KV-32TW67/32TW68/32V16)
		<DIODE>			
D1004	1-810-039-31	LED UNIT			
		<IC>			
IC1001	8-741-818-51	ELEMENT, RAY-CATCHER SBX1818-51			
		<JACK>			
J1001	1-695-585-11	JACK BLOCK, PIN (LTYPE) 3P			
		<CHIP CONDUCTOR>			
JR1090	1-216-295-91	CONDUCTOR, CHIP			(2012)
JR1092	1-216-295-91	CONDUCTOR, CHIP			(2012)
		<TRANSISTOR>			
Q1001	8-729-216-22	TRANSISTOR	2SA1162-G (KV-32V16)		
Q1002	8-729-422-27	TRANSISTOR	2SD601A-Q (KV-32V16)		
Q1003	8-729-422-27	TRANSISTOR	2SD601A-Q (KV-32S12/32S16/32V16)		
		<RESISTOR>			
R1001	1-247-804-11	CARBON	75	5% 1/4W	
R1002	1-249-425-11	CARBON	4 7K	5% 1/4W	
R1003	1-216-113-00	METAL GLAZE	470K	5% 1/10W	
R1004	1-249-425-11	CARBON	4 7K	5% 1/4W	
R1005	1-216-113-00	METAL GLAZE	470K	5% 1/10W	
R1007	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R1008	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R1009	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R1010	1-216-055-00	METAL GLAZE	1 8K	5% 1/10W	
R1011	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R1012	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R1013	1-216-033-00	METAL GLAZE	220	5% 1/10W	(KV-32TW67/32TW68)
R1014	1-216-047-00	METAL GLAZE	820	5% 1/10W	
R1015	1-216-033-00	METAL GLAZE	220	5% 1/10W	
R1016	1-216-033-00	METAL GLAZE	220	5% 1/10W	(KV-32V16)
R1017	1-216-105-91	METAL GLAZE	220K	5% 1/10W	(KV-32V16)
R1018	1-216-089-00	METAL GLAZE	47K	5% 1/10W	(KV-32V16)
R1019	1-216-025-91	METAL GLAZE	100	5% 1/10W	(KV-32V16)
R1021	1-216-045-00	METAL GLAZE	680	5% 1/10W	(KV-32S12/32S16/32V16)
		<SWITCH>			
S1001	1-571-532-21	SWITCH, TACTIL			
S1002	1-571-532-21	SWITCH, TACTIL			
S1003	1-571-532-21	SWITCH, TACTIL			
S1004	1-571-532-21	SWITCH, TACTIL			
S1005	1-571-532-21	SWITCH, TACTIL			
S1006	1-571-532-21	SWITCH, TACTIL			
S1007 ⚠	1-571-532-21	SWITCH, TACTIL			

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REF. NO	PART NO	DESCRIPTION			REMARK
**********					
	* A-1390-410-A	L BOARD, COMPLETE (KV-32V16)			
		**********			
		<CAPACITOR>			
C1902	1-164-004-11	CERAMICCHIP	0 1MF	10% 25V	
		<CONNECTOR>			
CN1903	* 1-564-518-11	PLUG, CONNECTOR 3P			
		<IC>			
IC1903	8-759-189-86	IC IS455J			
		<RESISTOR>			
R1901	1-216-133-00	METAL GLAZE	3 3M	5% 1/10W	
R1902	1-216-025-91	METAL GLAZE	100	5% 1/10W	
**********					
	* A-1390-411-A	Z BOARD, COMPLETE (KV-32V16)			
		**********			
		<CAPACITOR>			
C901	1-124-903-11	ELECT	1MF	20% 50V	
C902	1-124-903-11	ELECT	1MF	20% 50V	
C933	1-126-964-11	ELECT	10MF	20% 50V	
C934	1-126-964-11	ELECT	10MF	20% 50V	
		<CONNECTOR>			
CN901	* 1-564-520-11	PLUG, CONNECTOR 5P			
CN905	1-564-517-11	PLUG, CONNECTOR 2P			
		<DIODE>			
D901	8-719-121-24	DIODE RD9 1ESL			
D902	8-719-404-46	DIODE MA110			
D903	8-719-404-46	DIODE MA110			
D904	8-719-109-93	DIODE RD6 2ESB2			
D905	8-719-109-66	DIODE RD3 3ESB2			
D906	8-719-121-24	DIODE RD9 1ESL			
D907	8-719-404-46	DIODE MA110			
D908	8-719-404-46	DIODE MA110			
D909	8-719-404-46	DIODE MA110			
D910	8-719-404-46	DIODE MA110			
D911	8-719-404-46	DIODE MA110			
D912	8-719-404-46	DIODE MA110			
D920	8-719-404-46	DIODE MA110			
		<JACK>			
J901	1-764-873-11	JACK			
J902	1-764-874-11	JACK			
		<CHIP CONDUCTOR>			
JR901	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR902	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR903	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR907	1-216-295-91	CONDUCTOR, CHIP		(2012)	
		<TRANSISTOR>			
Q901	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q902	8-729-216-22	TRANSISTOR	2SA1162-G		
Q903	8-729-216-22	TRANSISTOR	2SA1162-G		
Q904	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q905	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q906	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q907	8-729-216-22	TRANSISTOR	2SA1162-G		
Q908	8-729-216-22	TRANSISTOR	2SA1162-G		
Q909	8-729-216-22	TRANSISTOR	2SA1162-G		
Q910	8-729-422-27	TRANSISTOR	2SD601A-QRS-TX		
Q911	8-729-140-93	TRANSISTOR	2SB733-34		
Q912	8-729-216-22	TRANSISTOR	2SA1162-G		
		<RESISTOR>			
R901	1-249-405-11	CARBON	100	5% 1/4WF	
R902	1-216-033-00	METAL GLAZE	220	5% 1/10W	
R903	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R904	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R905	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R906	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R907	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R908	1-216-005-00	METAL GLAZE	15	5% 1/10W	
R909	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R910	1-216-097-00	METAL GLAZE	100K	5% 1/10W	
R911	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R912	1-216-057-00	METAL GLAZE	2 2K	5% 1/10W	
R913	1-216-101-00	METAL GLAZE	150K	5% 1/10W	
R914	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R915	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R916	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R917	1-216-097-00	METAL GLAZE	100K	5% 1/10W	
R918	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R919	1-216-057-00	METAL GLAZE	2 2K	5% 1/10W	
R921	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R922	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R923	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R924	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R925	1-216-041-00	METAL GLAZE	470	5% 1/10W	
R926	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R927	1-216-097-00	METAL GLAZE	100K	5% 1/10W	

REF. NO	PART NO.	DESCRIPTION				REMARK
R928	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R929	1-249-405-11	CARBON	100	5%	1/4W F	
R935	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R936	1-216-089-00	METAL GLAZE	47K	5%	1/10W	

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* A-1394-415-A UA BOARD, COMPLETE (KV-32TW67/32TW68)
****
* A-1394-529-A UA BOARD, COMPLETE (KV-32V16)
****
* A-1394-676-A UA BOARD, COMPLETE (KV-32S12)
****

<CAPACITOR>

C401	1-163-031-11	CERAMICCHIP	0 01MF		50V	
C402	1-128-551-11	ELECT	22MF	20%	25V	
C405	1-128-551-11	ELECT	22MF	20%	25V	
C406	1-124-903-11	ELECT	1MF	20%	50V	
C407	1-124-903-11	ELECT	1MF	20%	50V	
C408	1-128-551-11	ELECT	22MF	20%	25V	
C409	1-124-903-11	ELECT	1MF	20%	50V	
C410	1-124-903-11	ELECT	1MF	20%	50V	
C412	1-128-551-11	ELECT	22MF	20%	25V	
C413	1-126-964-11	ELECT	10MF	20%	50V	
C414	1-109-889-11	ELECT	1MF	20%	50V	
C415	1-109-889-11	ELECT	1MF	20%	50V	
C416	1-126-964-11	ELECT	10MF	20%	50V	
C417	1-124-902-00	ELECT	0 47MF	20%	50V	
C418	1-124-902-00	ELECT	0 47MF	20%	50V	
C420	1-163-031-11	CERAMICCHIP	0 01MF		50V	
C430	1-109-889-11	ELECT	1MF	20%	50V	(KV-32V16)
C431	1-109-889-11	ELECT	1MF	20%	50V	(KV-32V16)
C432	1-128-551-11	ELECT	22MF	20%	25V	(KV-32V16)
C433	1-104-663-11	ELECT	33MF	20%	25V	
C434	1-163-117-00	CERAMICCHIP	100PF	5%	50V	
C440	1-126-964-11	ELECT	10MF	20%	50V	(KV-32TW67/32TW68)
C441	1-126-967-11	ELECT	47MF	20%	16V	
C442	1-163-117-00	CERAMICCHIP	100PF	5%	50V	(KV-32V16/32TW67/32TW68)
C462	1-126-933-11	ELECT	100MF	20%	16V	
C470	1-126-967-11	ELECT	47MF	20%	16V	
C471	1-128-551-11	ELECT	22MF	20%	25V	

<FILTER BLOCK>

CM401	1-467-554-21	FILTER BLOCK, COMB (KV-32S12/32V16)
CM402	1-466-912-21	FILTER BLOCK, COMB (KV-32TW67/32TW68)

<CONNECTOR>

CN141	* 1-564-520-11	PLUG, CONNECTOR 5P
CN142	1-564-517-11	PLUG, CONNECTOR 2P (KV-32S12/32V16)
CN143	1-750-395-11	SOCKET, CONNECTOR 32P
CN144	* 1-564-521-11	PLUG, CONNECTOR 6P (KV-32V16)
CN146	1-573-300-21	CONNECTOR, BOARD TO BOARD 18P (KV-32V16/32TW67/32TW68)
CN147	1-750-395-11	SOCKET, CONNECTOR 32P
CN148	1-564-517-11	PLUG, CONNECTOR 2P
CN149	* 1-564-519-11	PLUG, CONNECTOR 4P (KV-32V16)

<DIODE>

D401	8-719-110-17	DIODE RD10ESB2
D402	8-719-110-17	DIODE RD10ESB2
D403	8-719-110-17	DIODE RD10ESB2
D404	8-719-110-17	DIODE RD10ESB2
D405	8-719-110-17	DIODE RD10ESB2
D408	8-719-110-17	DIODE RD10ESB2
D409	8-719-110-17	DIODE RD10ESB2 (KV-32S12/32V16)
D410	8-719-110-17	DIODE RD10ESB2
D411	8-719-110-17	DIODE RD10ESB2
D429	8-719-110-17	DIODE RD10ESB2
D430	8-719-110-17	DIODE RD10ESB2
D431	8-719-110-17	DIODE RD10ESB2
D436	8-719-110-17	DIODE RD10ESB2
D437	8-719-110-17	DIODE RD10ESB2

<IC>

IC402	8-752-067-28	IC CXA1545AS

<JACK>

J401	1-750-515-11	TERMINAL BLOCK,S 3P
J402	1-750-517-11	JACK BLOCK, PIN 3P
J404	1-750-516-11	JACK BLOCK, PIN 2P

<CHIP CONDUCTOR>

JR402	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR405	1-216-295-91	CONDUCTOR, CHIP	(2012) (KV-32S12/32V16)
JR408	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR410	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR411	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR412	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR415	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR416	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR418	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR419	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR422	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR428	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR429	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR430	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR431	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR434	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR498	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR499	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR901	1-216-295-91	CONDUCTOR, CHIP	(2012) (KV-32TW67/32TW68)

UA (KV-32TW67/32TW68) (KV-32S12/V16) C

REF. NO	PART NO.	DESCRIPTION				REMARK
		<COIL>				
L401	1-410-473-11	INDUCTOR 18UH				
L403	1-410-476-11	INDUCTOR 33UH (KV-32V16/32TW67/32TW68)				
L404	1-410-669-31	INDUCTOR 33UH (KV-32V16/32TW67/32TW68)				
		<TRANSISTOR>				
Q401	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q405	8-729-216-22	TRANSISTOR	2SA1162-G			
Q406	8-729-216-22	TRANSISTOR	2SA1162-G			
Q410	8-729-422-27	TRANSISTOR	2SD601A-Q (KV-32V16)			
Q414	8-729-422-27	TRANSISTOR	2SD601A-Q (KV-32TW67/32TW68)			
Q415	8-729-422-27	TRANSISTOR	2SD601A-Q (KV-32V16)			
Q416	8-729-216-22	TRANSISTOR	2SA1162-G (KV-32V16)			
Q417	8-729-216-22	TRANSISTOR	2SA1162-G (KV-32V16)			
Q418	8-729-216-22	TRANSISTOR	2SA1162-G (KV-32V16)			
		<RESISTOR>				
R401	1-247-804-11	CARBON	75	5%	1/4W	
R402	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R403	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R404	1-247-804-11	CARBON	75	5%	1/4W	
R405	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R406	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R407	1-247-804-11	CARBON	75	5%	1/4W	
R408	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R409	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R410	1-249-425-11	CARBON	4 7K	5%	1/4W	
R411	1-249-425-11	CARBON	4 7K	5%	1/4W	
R412	1-249-425-11	CARBON	4 7K	5%	1/4W	
R413	1-249-425-11	CARBON	4 7K	5%	1/4W	
R414	1-247-804-11	CARBON	75	5%	1/4W	
R415	1-249-425-11	CARBON	4 7K	5%	1/4W	
R416	1-216-647-11	METAL CHIP	680	0 5%	1/10W	
R417	1-216-645-11	METAL CHIP	560	0 5%	1/10W	
R421	1-216-065-00	METAL GLAZE	4 7K	5%	1/10W	
R425	1-216-065-00	METAL GLAZE	4 7K	5%	1/10W	
R431	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R432	1-216-295-91	CONDUCTOR, CHIP		(2012)		
R434	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R435	1-216-295-91	CONDUCTOR,CHIP		(2012)		
R439	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R441	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R442	1-216-025-91	METAL GLAZE	100	5%	1/10W	(KV-32S12)
R443	1-216-025-91	METAL GLAZE	100	5%	1/10W	(KV-32S12)
R444	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R445	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R446	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R450	1-208-774-11	METAL CHIP	470	0 5%	1/10W	
R451	1-216-065-00	METAL GLAZE	4 7K	5%	1/10W	
R452	1-216-025-91	METAL GLAZE	100	5%	1/10W	(KV-32V16)
R453	1-216-645-11	METAL CHIP	560	0 5%	1/10W	
R454	1-216-295-91	CONDUCTOR, CHIP		(2012)		
R456	1-216-041-00	METAL GLAZE	470	5%	1/10W	(KV-32V16/32TW67/32TW68)
R457	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R458	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R459	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-32V16)
R460	1-216-037-00	METAL GLAZE	330	5%	1/10W	(KV-32V16)
R461	1-216-065-00	METAL GLAZE	4 7K	5%	1/10W	(KV-32V16)
R462	1-216-065-00	METAL GLAZE	4 7K	5%	1/10W	(KV-32V16)
R463	1-216-045-00	METAL GLAZE	680	5%	1/10W	(KV-32V16)
R464	1-216-045-00	METAL GLAZE	680	5%	1/10W	(KV-32V16)
R475	1-216-049-91	METAL GLAZE	1K	5%	1/10W	(KV-32TW67/32TW68)
R476	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-32V16)
R478	1-216-041-00	METAL GLAZE	470	5%	1/10W	(KV-32V16/32TW67/32TW68)
R479	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-32V16)
R480	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-32V16)
R481	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-32V16)
R482	1-249-417-11	CARBON	1K	5%	1/4W	
R483	1-249-417-11	CARBON	1K	5%	1/4W	
R488	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-32V16)
R489	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-32V16)
R490	1-216-295-91	CONDUCTOR, CHIP		(2012)		
R491	1-216-295-91	CONDUCTOR, CHIP		(2012)		
R492	1-216-295-91	CONDUCTOR, CHIP		(2012)		
R1438	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-32V16/32TW67/32TW68)

****

* A-1331-351-A C BOARD, COMPLETE

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		<CAPACITOR>				
C700	1-102-074-00	CERAMIC	0 001MF	10%	50V	
C701	1-162-114-00	CERAMIC	0 0047MF	2KV		
C702	1-106-375-12	MYLAR	0 022MF	99%	200V	
C703	1-106-375-12	MYLAR	0 022MF	99%	200V	
C705	1-107-651-11	ELECT	4 7MF	20%	250V	
C706	1-126-933-11	ELECT	100MF	20%	16V	
C707	1-102-129-00	CERAMIC	0 01MF	10%	50V	
C711	1-164-083-11	CERAMIC	680PF	10%	50V	
C712	1-164-081-11	CERAMIC	470PF	10%	50V	
C731	1-164-083-11	CERAMIC	680PF	10%	50V	
C732	1-164-081-11	CERAMIC	470PF	10%	50V	
C751	1-164-083-11	CERAMIC	680PF	10%	50V	
C752	1-164-083-11	CERAMIC	680PF	10%	50V	
		<CONNECTOR>				
CN701	1-695-915-11	TAB (CONTACT)				
CN702	* 1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P				
CN703	* 1-564-509-11	PLUG, CONNECTOR 6P				
		<DIODE>				
D711	8-719-911-19	DIODE 1SS119-25				
D712	8-719-911-19	DIODE 1SS119-25				

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie

C E

REF. NO	PART NO.	DESCRIPTION			REMARK
D731	8-719-911-19	DIODE 1SS119-25			
D732	8-719-911-19	DIODE 1SS119-25			
D751	8-719-911-19	DIODE 1SS119-25			
D752	8-719-911-19	DIODE 1SS119-25			
D770	8-719-911-19	DIODE 1SS119-25			
D771	8-719-911-19	DIODE 1SS119-25			
D772	8-719-911-19	DIODE 1SS119-25			
D773	8-719-911-19	DIODE 1SS119-25			
D777	8-719-109-72	DIODE RD3 9ESB2			
D790	8-719-911-19	DIODE 1SS119-25			
D791	8-719-911-19	DIODE 1SS119-25			
D792	8-719-911-19	DIODE 1SS119-25			
		<JACK>			
J701 ⚠	1-540-071-11	SOCKET, PICTURE TUBE			
		<COIL>			
L701	1-410-478-11	INDUCTOR	47UH		
		<TRANSISTOR>			
Q711	8-729-326-11	TRANSISTOR	2SC2611		
Q712	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q731	8-729-326-11	TRANSISTOR	2SC2611		
Q732	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q751	8-729-326-11	TRANSISTOR	2SC2611		
Q752	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q770	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q771	8-729-200-17	TRANSISTOR	2SA1091-O		
Q772	8-729-200-17	TRANSISTOR	2SA1091-O		
Q773	8-729-200-17	TRANSISTOR	2SA1091-O		
		<RESISTOR>			
R700	1-247-739-11	CARBON	100	5% 1/2W	
R701	1-244-941-00	CARBON	680K	5% 1/2W	
R702	1-249-496-11	CARBON	100K	5% 1/2W	
R703	1-249-496-11	CARBON	100K	5% 1/2W	
R704	1-216-398-11	METAL OXIDE	5 6	5% 3W F	
R705	1-216-398-11	METAL OXIDE	5 6	5% 3W F	
R710	1-247-758-11	CARBON	3 3K	5% 1/2W	
R711	1-247-807-31	CARBON	100	5% 1/4W	
R712	1-215-924-00	METAL OXIDE	15K	5% 3W F	
R714	1-249-425-11	CARBON	4 7K	5% 1/4W	
R716	1-249-417-11	CARBON	1K	5% 1/4W	
R717	1-249-393-11	CARBON	10	5% 1/4W	
R718	1-249-413-11	CARBON	470	5% 1/4W	
R730	1-247-758-11	CARBON	3 3K	5% 1/2W	
R731	1-247-807-31	CARBON	100	5% 1/4W	
R732	1-215-924-00	METAL OXIDE	15K	5% 3W F	
R734	1-249-425-11	CARBON	4 7K	5% 1/4W	
R736	1-249-411-11	CARBON	330	5% 1/4W	
R737	1-249-393-11	CARBON	10	5% 1/4W	
R750	1-247-758-11	CARBON	3 3K	5% 1/2W	
R751	1-247-807-31	CARBON	100	5% 1/4W	
R752	1-215-924-00	METAL OXIDE	15K	5% 3W F	
R754	1-249-425-11	CARBON	4 7K	5% 1/4W	
R756	1-249-411-11	CARBON	330	5% 1/4W	
R757	1-249-393-11	CARBON	10	5% 1/4W	
R770	1-247-863-91	CARBON	22K	5% 1/4W	
R771	1-249-409-11	CARBON	220	5% 1/4W F	
R772	1-249-409-11	CARBON	220	5% 1/4W F	
R773	1-249-409-11	CARBON	220	5% 1/4W F	
R774	1-249-437-11	CARBON	47K	5% 1/4W	
R775	1-249-417-11	CARBON	1K	5% 1/4W F	
R776	1-249-409-11	CARBON	220	5% 1/4W F	
R790	1-249-413-11	CARBON	470	5% 1/4W	
R791	1-249-412-11	CARBON	390	5% 1/4W	
		<VARIABLE RESISTOR>			
RV702	1-230-641-11	RES, ADJ, METAL GLAZE 2 2M			

****

* A-1341-622-A E BOARD, COMPLETE
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	1-508-765-00	PIN,CONNECTOR (5MM PITCH) 3P			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C1501	1-126-941-11	ELECT	470MF	20% 16V	
C1502	1-137-372-11	FILM	0 022MF	5% 50V	
C1503	1-102-234-00	CERAMIC	270PF	10% 500V	
C1504	1-136-165-00	FILM	0 1MF	5% 50V	
C1505	1-126-964-11	ELECT	10MF	20% 50V	
C1507	1-126-964-11	ELECT	10MF	20% 50V	
C1509	1-136-165-00	FILM	0 1MF	5% 50V	
C1510	1-137-370-11	FILM	0 01MF	5% 50V	
C1516	1-136-165-00	FILM	0 1MF	5% 50V	
C1519	1-136-104-00	FILM	0 16MF	5% 200V	
C1522	1-126-942-61	ELECT	1000MF	20% 16V	
C1523	1-136-177-00	FILM	1MF	5% 50V	
C1524	1-126-963-11	ELECT	4 7MF	20% 50V	
C1529	1-126-964-11	ELECT	10MF	20% 50V	
C1530	1-126-964-11	ELECT	10MF	20% 50V	
C1532	1-126-963-11	ELECT	4 7MF	20% 50V	
C1533	1-126-233-11	ELECT	22MF	20% 25V	
C1542	1-104-664-11	ELECT	47MF	20% 16V	
C1550	1-136-756-11	FILM	0 24MF	5% 200V	
		<CONNECTOR>			
CN122	1-573-299-21	CONNECTOR, BOARD TO BOARD 10P			
CN123	1-573-299-21	CONNECTOR, BOARD TO BOARD 10P			
		<DIODE>			
D1501	8-719-911-19	DIODE 1SS119-25			

E P

REF. NO	PART NO.	DESCRIPTION				REMARK
D1502	8-719-801-35	THYRISTOR SH0R3D42(N)				
D1503	8-719-980-78	DIODE ERA83-006				
D1504	8-719-302-43	DIODE EL1Z				
D1505	8-719-911-19	DIODE 1SS119-25				
D1506	8-719-911-19	DIODE 1SS119-25				
D1507	8-719-911-19	DIODE 1SS119-25				
D1508	8-719-110-17	DIODE RD10ESB2				
D1509	8-719-110-17	DIODE RD10ESB2				
D1510	8-719-911-19	DIODE 1SS119-25				
D1513	8-719-302-43	DIODE EL1Z				
D1515	8-719-911-19	DIODE 1SS119-25				
D1516	8-719-987-87	DIODE ERA85-009				
D1517	8-719-911-19	DIODE 1SS119-25				
		<IC>				
IC1501	8-752-052-88	IC CXA1526P				
IC1502	8-759-701-59	IC NJM78M09FA				
IC1504	8-759-135-80	IC UPC358C				
		<COIL>				
L1502	1-459-592-11	COIL (WITH CORE) (PMC)				
L1504	1-459-474-11	COIL (WITH CORE)				
		<TRANSISTOR>				
Q1501	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q1502	8-729-140-96	TRANSISTOR	2SD774-34			
Q1503	8-729-119-76	TRANSISTOR	2SA1175-HFE			
Q1506	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q1507	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q1508	8-729-140-93	TRANSISTOR	2SB733-34			
Q1509	8-729-140-93	TRANSISTOR	2SB733-34			
Q1511	8-729-119-76	TRANSISTOR	2SA1175-HFE			
Q1514	8-729-019-01	TRANSISTOR	2SD2394-EF			
Q1519	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q1520	8-729-119-78	TRANSISTOR	2SC2785-HFE			
		<RESISTOR>				
R1501	1-247-815-91	CARBON	220	5%	1/4W	
R1502	1-247-815-91	CARBON	220	5%	1/4W	
R1503	1-249-435-11	CARBON	33K	5%	1/4W	
R1504	1-249-429-11	CARBON	10K	5%	1/4W	
R1505	1-249-421-11	CARBON	2 2K	5%	1/4W	
R1506	1-249-423-11	CARBON	3 3K	5%	1/4W	
R1507	1-249-410-11	CARBON	270	5%	1/4W	
R1508	1-249-437-11	CARBON	47K	5%	1/4W	
R1509	1-249-429-11	CARBON	10K	5%	1/4W	
R1510	1-215-461-00	METAL	47K	1%	1/4W	
R1511	1-216-379-11	METAL OXIDE	6 8	5%	2W F	
R1513	1-249-423-11	CARBON	3 3K	5%	1/4W	
R1514	1-247-885-00	CARBON	180K	5%	1/4W	
R1515	1-215-905-11	METAL OXIDE	10	5%	3W F	
R1519	1-249-417-11	CARBON	1K	5%	1/4W	
R1520	1-249-417-11	CARBON	1K	5%	1/4W	

REF. NO	PART NO	DESCRIPTION				REMARK
R1522	1-249-417-11	CARBON	1K	5%	1/4W	
R1527	1-249-417-11	CARBON	1K	5%	1/4WF	
R1528	1-249-438-11	CARBON	56K	5%	1/4W	
R1529	1-249-434-11	CARBON	27K	5%	1/4W	
R1530	1-249-432-11	CARBON	18K	5%	1/4W	
R1533	1-249-427-11	CARBON	6 8K	5%	1/4W	
R1534	1-249-424-11	CARBON	3 9K	5%	1/4W	
R1535	1-249-425-11	CARBON	4 7K	5%	1/4W	
R1536	1-215-857-11	METALOXIDE	10	5%	1W F	
R1537	1-249-404-00	CARBON	82	5%	1/4W	
R1538	1-216-379-11	METAL OXIDE	6 8	5%	2W F	
R1541	1-249-441-11	CARBON	100K	5%	1/4W	
R1543	1-249-414-11	CARBON	560	5%	1/4W	
R1546	1-215-885-00	METALOXIDE	68	5%	2W F	
R1552	1-249-426-11	CARBON	5 6K	5%	1/4W	
R1554	1-249-393-11	CARBON	10	5%	1/4W	
R1556	1-249-438-11	CARBON	56K	5%	1/4W	
R1559	1-249-429-11	CARBON	10K	5%	1/4W	
R1564	1-249-435-11	CARBON	33K	5%	1/4W	
R1568	1-247-891-00	CARBON	330K	5%	1/4W	
R1569	1-249-413-11	CARBON	470	5%	1/4W	
R1578	1-249-423-11	CARBON	3 3K	5%	1/4W	
R1582	1-249-411-11	CARBON	330	5%	1/4W	
R1583	1-249-421-11	CARBON	2 2K	5%	1/4W	
R1585	1-249-441-11	CARBON	100K	5%	1/4W	
R1586	1-247-891-00	CARBON	330K	5%	1/4W	

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* A-1195-062-A P BOARD, COMPLETE

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(KV-32S16/32V16/32TW67/32TW68)

<CAPACITOR>

C3201	1-104-664-11	ELECT	47MF	20%	16V
C3203	1-164-004-11	CERAMIC CHIP	0 1MF	10%	25V
C3204	1-126-964-11	ELECT	10MF	20%	50V
C3205	1-126-964-11	ELECT	10MF	20%	50V
C3206	1-126-964-11	ELECT	10MF	20%	50V
C3207	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C3208	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C3209	1-126-962-11	ELECT	3 3MF	20%	50V
C3210	1-104-664-11	ELECT	47MF	20%	16V
C3212	1-126-962-11	ELECT	3 3MF	20%	50V
C3213	1-164-346-11	CERAMIC CHIP	1MF		16V
C3214	1-164-346-11	CERAMIC CHIP	1MF		16V
C3215	1-164-346-11	CERAMIC CHIP	1MF		16V
C3216	1-164-005-11	CERAMIC CHIP	0 47MF		25V
C3217	1-164-346-11	CERAMIC CHIP	1MF		16V
C3218	1-164-346-11	CERAMIC CHIP	1MF		16V
C3219	1-126-941-11	ELECT	470MF	20%	16V
C3220	1-164-346-11	CERAMIC CHIP	1MF		16V
C3221	1-164-346-11	CERAMIC CHIP	1MF		16V
C3222	1-164-336-11	CERAMIC CHIP	0 33MF		25V

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REF. NO	PART NO	DESCRIPTION			REMARK
C3223	1-164-336-11	CERAMIC CHIP	0 33MF		25V
C3224	1-164-222-11	CERAMIC CHIP	0 22MF		25V
C3225	1-164-222-11	CERAMIC CHIP	0 22MF		25V
C3226	1-164-005-11	CERAMIC CHIP	0 47MF		25V
C3227	1-164-346-11	CERAMIC CHIP	1MF		16V
C3228	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C3229	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C3230	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3231	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C3232	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C3233	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3234	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3235	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3236	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3237	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3238	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3239	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3240	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3241	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C3242	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3243	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C3244	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C3245	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3246	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3247	1-163-033-91	CERAMIC CHIP	0 022MF		50V
C3248	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C3249	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C3250	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C3251	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3252	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C3253	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3254	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3255	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3256	1-164-232-11	CERAMIC CHIP	0 01MF	10%	50V
C3257	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C3258	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C3259	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C3260	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C3261	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3263	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3264	1-165-319-11	CERAMIC CHIP	0 1MF		50V
C3265	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3266	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3267	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3268	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3269	1-163-141-00	CERAMIC CHIP	0 001MF	5%	50V
C3270	1-165-319-11	CERAMIC CHIP	0 1MF		50V
C3271	1-165-319-11	CERAMIC CHIP	0 1MF		50V
C3272	1-165-319-11	CERAMIC CHIP	0 1MF		50V
C3273	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C3274	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3275	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3276	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C3277	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3278	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3279	1-163-141-00	CRAMIC CHIP	0 001MF	5%	50V
C3280	1-126-964-11	ELECT	10MF	20%	50V

REF. NO	PART NO	DESCRIPTION			REMARK
C3282	1-164-346-11	CERAMIC CHIP	1MF		16V
		<CONNECTOR>			
CN150	1-573-297-21	CONNECTOR, BOARD TO BOARD 18P			
		<DIODE>			
D3202	8-719-031-68	DIODE HVU359TRF			
D3203	8-719-404-46	DIODE MA110			
D3208	8-719-110-17	DIODE RD10ESB2			
D3209	8-719-110-17	DIODE RD10ESB2			
		<IC>			
IC3200	8-759-288-13	IC MSM51C262-ZS			
IC3201	8-759-093-29	IC MB86144BPF-G-BND			
IC3202	8-759-093-28	IC MB40176PF-G-BND-EF			
IC3203	8-759-093-28	IC MB40176PF-G-BND-EF			
IC3204	8-759-093-25	IC MB3512PFQ			
IC3205	8-759-243-19	IC TC7SU04F			
		<COIL>			
L3201	1-410-470-11	INDUCTOR 10UH			
L3202	1-408-424-00	INDUCTOR 180UH			
L3203	1-408-424-00	INDUCTOR 180UH			
L3204	1-410-476-11	INDUCTOR 33UH			
L3205	1-410-470-11	INDUCTOR 10UH			
L3206	1-410-387-11	INDUCTOR 33UH			
L3207	1-410-387-11	INDUCTOR 33UH			
L3208	1-410-387-11	INDUCTOR 33UH			
L3209	1-410-387-11	INDUCTOR 33UH			
		<TRANSISTOR>			
Q3201	8-729-424-02	TRANSISTOR	2SA1162-G		
Q3202	8-729-424-02	TRANSISTOR	2SD601A-Q		
Q3203	8-729-424-02	TRANSISTOR	2SA1162-G		
Q3204	8-729-424-02	TRANSISTOR	2SA1162-G		
Q3206	8-729-424-02	TRANSISTOR	2SD601A-Q		
Q3207	8-729-424-02	TRANSISTOR	2SA1162-G		
Q3208	8-729-424-02	TRANSISTOR	2SD601A-Q		
Q3209	8-729-424-02	TRANSISTOR	2SA1162-G		
Q3210	8-729-424-02	TRANSISTOR	2SA1162-G		
		<RESISTOR>			
R3201	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R3202	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R3203	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3204	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3205	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R3207	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R3208	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R3209	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R3210	1-216-089-00	METAL GLAZE	47K	5%	1/10W

P UA (KV-32S16 (US))

REF. NO	PART NO.	DESCRIPTION			REMARK
R3211	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R3212	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R3213	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R3214	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R3215	1-216-057-00	METAL GLAZE	2 2K	5%	1/10W
R3216	1-216-057-00	METAL GLAZE	2 2K	5%	1/10W
R3217	1-216-057-00	METAL GLAZE	2 2K	5%	1/10W
R3218	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3219	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3220	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3221	1-216-655-11	METAL CHIP	1 5K	0 50%	1/10W
R3222	1-216-655-11	METAL CHIP	1 5K	0 50%	1/10W
R3223	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3224	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3225	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3226	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R3227	1-216-647-11	METAL CHIP	680	0 50%	1/10W
R3228	1-216-045-00	METAL GLAZE	680	5%	1/10W
R3229	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R3230	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R3231	1-216-001-00	METAL GLAZE	10	5%	1/10W
R3232	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R3233	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3234	1-216-651-11	METAL CHIP	1K	0 50%	1/10W
R3235	1-216-043-91	METAL GLAZE	560	5%	1/10W
R3236	1-216-065-00	METAL GLAZE	4 7K	5%	1/10W
R3237	1-216-043-91	METAL GLAZE	560	5%	1/10W
R3238	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3239	1-216-043-91	METAL GLAZE	560	5%	1/10W
R3241	1-216-057-00	METAL GLAZE	2 2K	5%	1/10W
R3242	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3243	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3244	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3245	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3246	1-216-069-00	METAL GLAZE	6 8K	5%	1/10W
R3247	1-216-063-00	METAL GLAZE	3 9K	5%	1/10W
R3248	1-216-295-91	CONDUCTOR, CHIP		(2012)	
R3249	1-216-057-00	METAL GLAZE	2 2K	5%	1/10W
R3250	1-216-043-91	METAL GLAZE	560	5%	1/10W
R3251	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3252	1-216-043-91	METAL GLAZE	560	5%	1/10W
R3253	1-216-065-00	METAL GLAZE	4 7K	5%	1/10W
R3254	1-216-043-91	METAL GLAZE	560	5%	1/10W
R3255	1-216-041-00	METAL GLAZE	470	5%	1/10W
R3256	1-216-043-91	METAL GLAZE	560	5%	1/10W
R3259	1-216-298-00	METAL GLAZE	2 2	5%	1/10W
R3260	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R3263	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3264	1-216-025-91	METAL GLAZE	100	5%	1/10W
R3265	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3266	1-216-057-00	METAL GLAZE	2 2K	5%	1/10W
R3267	1-216-055-00	METAL GLAZE	1 8K	5%	1/10W
R3268	1-216-053-00	METAL GLAZE	1 5K	5%	1/10W
R3269	1-216-057-00	METAL GLAZE	2 2K	5%	1/10W
R3270	1-216-657-11	METAL CHIP	1 8K	0 50%	1/10W
R3271	1-216-655-11	METAL CHIP	1 5K	0 50%	1/10W
R3273	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R3274	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3275	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3276	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R3277	1-216-298-00	METAL GLAZE	2 2	5%	1/10W
		<CRYSTAL>			
X3201	1-567-878-11	VIBRATOR, CRYSTAL			
X3202	1-567-878-11	VIBRATOR, CRYSTAL			
		**********			
	* A-1394-527-A	UA BOARD, COMPLETE (KV-32S16 US MODEL)			
		**********			
		<CAPACITOR>			
C401	1-163-031-11	CERAMIC CHIP	0 01MF		50V
C402	1-128-551-11	ELECT	22MF	20%	25V
C405	1-128-551-11	ELECT	22MF	20%	25V
C406	1-124-903-11	ELECT	1MF	20%	50V
C407	1-124-903-11	ELECT	1MF	20%	50V
C408	1-128-551-11	ELECT	22MF	20%	25V
C409	1-124-903-11	ELECT	1MF	20%	50V
C410	1-124-903-11	ELECT	1MF	20%	50V
C412	1-128-551-11	ELECT	22MF	20%	25V
C413	1-126-964-11	ELECT	10MF	20%	50V
C414	1-109-889-11	ELECT	1MF	20%	50V
C415	1-109-889-11	ELECT	1MF	20%	50V
C416	1-126-964-11	ELECT	10MF	20%	50V
C417	1-124-902-00	ELECT	0 47MF	20%	50V
C418	1-124-902-00	ELECT	0 47MF	20%	50V
C420	1-163-031-11	CERAMIC CHIP	0 01MF		50V
C433	1-104-663-11	ELECT	33MF	20%	25V
C434	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C441	1-126-967-11	ELECT	47MF	20%	16V
C442	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C462	1-126-933-11	ELECT	100MF	20%	16V
C470	1-126-967-11	ELECT	47MF	20%	16V
C471	1-128-551-11	ELECT	22MF	20%	25V
		<FILTER BLOCK>			
CM401	1-467-554-21	FILTER BLOCK, COMB			
		<CONNECTOR>			
CN141	* 1-564-520-11	PLUG, CONNECTOR 5P			
CN142	1-564-517-11	PLUG, CONNECTOR 2P			
CN143	1-750-395-11	SOCKET, CONNECTOR 32P			
CN146	1-573-300-21	CONNECTOR, BOARD TO BOARD 18P			
CN147	1-750-395-11	SOCKET, CONNECTOR 32P			
CN148	1-564-517-11	PLUG, CONNECTOR 2P			

REF. NO	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D401	8-719-110-17	DIODE RD10ESB2	
D402	8-719-110-17	DIODE RD10ESB2	
D403	8-719-110-17	DIODE RD10ESB2	
D404	8-719-110-17	DIODE RD10ESB2	
D405	8-719-110-17	DIODE RD10ESB2	
D408	8-719-110-17	DIODE RD10ESB2	
D409	8-719-110-17	DIODE RD10ESB2	
D410	8-719-110-17	DIODE RD10ESB2	
D411	8-719-110-17	DIODE RD10ESB2	
D429	8-719-110-17	DIODE RD10ESB2	
D430	8-719-110-17	DIODE RD10ESB2	
D431	8-719-110-17	DIODE RD10ESB2	
D436	8-719-110-17	DIODE RD10ESB2	
D437	8-719-110-17	DIODE RD10ESB2	
		<IC>	
IC402	8-752-067-28	IC CXA1545AS	
		<JACK>	
J401	1-750-515-11	TERMINAL BLOCK,S 3P	
J402	1-750-517-11	JACK BLOCK, PIN 3P	
J404	1-750-516-11	JACK BLOCK, PIN 2P	
		<CHIP CONDUCTOR>	
JR402	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR405	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR408	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR410	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR411	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR412	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR415	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR416	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR418	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR419	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR422	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR428	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR429	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR430	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR431	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR434	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR498	1-216-295-91	CONDUCTOR, CHIP	(2012)
JR499	1-216-295-91	CONDUCTOR, CHIP	(2012)
		<COIL>	
L401	1-410-473-11	INDUCTOR 18UH	
L403	1-410-476-11	INDUCTOR 33UH	
L404	1-410-669-31	INDUCTOR 33UH	
		<TRANSISTOR>	
Q401	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q405	8-729-422-27	TRANSISTOR 2SB709A-Q	
Q406	8-729-422-27	TRANSISTOR 2SB709A-Q	
Q410	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q415	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q416	8-729-422-27	TRANSISTOR 2SB709A-Q	
Q417	8-729-422-27	TRANSISTOR 2SB709A-Q	
Q418	8-729-422-27	TRANSISTOR 2SB709A-Q	
		<RESISTOR>	
R401	1-247-408-11	CARBON 75 5% 1/4W	
R402	1-216-113-11	METAL GLAZE 470K 5% 1/10W	
R403	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R404	1-247-408-11	CARBON 75 5% 1/4W	
R405	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R406	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R407	1-247-804-11	CARBON 75 5% 1/4W	
R408	1-216-113-11	METAL GLAZE 470K 5% 1/10W	
R409	1-216-113-11	METAL GLAZE 470K 5% 1/10W	
R410	1-249-425-11	CARBON 4.7K 5% 1/4W	
R411	1-249-425-11	CARBON 4.7K 5% 1/4W	
R412	1-249-425-11	CARBON 4.7K 5% 1/4W	
R413	1-249-425-11	CARBON 4.7K 5% 1/4W	
R414	1-247-408-11	CARBON 75 5% 1/4W	
R415	1-249-425-11	CARBON 4.7K 5% 1/4W	
R416	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
R417	1-216-645-11	METAL CHIP 560 0.5% 1/10W	
R421	1-216-065-11	METAL GLAZE 4.7K 5% 1/10W	
R425	1-216-065-11	METAL GLAZE 4.7K 5% 1/10W	
R431	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R432	1-216-295-91	CONDUCTOR, CHIP (2012)	
R434	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R435	1-216-295-91	CONDUCTOR, CHIP (2012)	
R439	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R441	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R444	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R445	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R446	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R450	1-208-774-11	METAL CHIP 470 0.5% 1/10W	
R451	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R453	1-216-645-11	METAL CHIP 560 0.5% 1/10W	
R454	1-216-295-91	CONDUCTOR, CHIP (2012)	
R456	1-216-041-11	METAL GLAZE 470 5% 1/10W	
R457	1-216-033-11	METAL GLAZE 220 5% 1/10W	
R458	1-216-033-11	METAL GLAZE 220 5% 1/10W	
R478	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R482	1-249-417-11	CARBON 1K 5% 1/4W	
R483	1-249-417-11	CARBON 1K 5% 1/4W	
R490	1-216-295-91	CONDUCTOR, CHIP (2012)	
R491	1-216-295-91	CONDUCTOR, CHIP (2012)	
R492	1-216-295-91	CONDUCTOR, CHIP (2012)	
R1438	1-216-081-00	METAL GLAZE 22K 5% 1/10W	

UA (KV-32S16 (Canadian))

REF. NO	PART NO.	DESCRIPTION			REMARK
	* A-1394-544-A	UA BOARD, COMPLETE (KV-32S16 Canadian MODEL)			
		**********			
		<CAPACITOR>			
C401	1-163-031-11	CERAMICCHIP	0 01MF	50V	
C402	1-128-551-11	ELECT	22MF	20% 25V	
C405	1-128-551-11	ELECT	22MF	20% 25V	
C409	1-124-903-11	ELECT	1MF	20% 50V	
C410	1-124-903-11	ELECT	1MF	20% 50V	
C411	1-104-665-11	ELECT	100MF	20% 25V	
C412	1-128-551-11	ELECT	22MF	20% 25V	
C413	1-126-964-11	ELECT	10MF	20% 50V	
C414	1-109-889-11	ELECT	1MF	20% 50V	
C415	1-109-889-11	ELECT	1MF	20% 50V	
C416	1-126-964-11	ELECT	10MF	20% 50V	
C420	1-163-031-11	CERAMICCHIP	0 01MF	50V	
C441	1-126-967-11	ELECT	47MF	20% 16V	
C470	1-126-967-11	ELECT	47MF	20% 16V	
C471	1-128-551-11	ELECT	22MF	20% 25V	
		<FILTER BLOCK>			
CM401	1-467-554-21	FILTER BLOCK, COMB			
		<CONNECTOR>			
CN143	1-750-395-11	SOCKET, CONNECTOR 32P			
CN147	1-750-395-11	SOCKET, CONNECTOR 32P			
		<DIODE>			
D401	8-719-110-17	DIODE RD10ESB2			
D402	8-719-110-17	DIODE RD10ESB2			
D408	8-719-110-17	DIODE RD10ESB2			
D409	8-719-110-17	DIODE RD10ESB2			
D410	8-719-110-17	DIODE RD10ESB2			
D411	8-719-110-17	DIODE RD10ESB2			
		<IC>			
IC401	8-759-634-69	IC M52470P			
IC403	8-759-711-32	IC NJM2245M			
IC404	8-759-164-18	IC MM1118XFF			
		<JACK>			
J401	1-750-515-11	TERMINAL BLOCK,S 3P			
		<CHIP CONDUCTOR>			
JR402	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR405	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR408	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR409	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR410	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR411	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR412	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR415	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR416	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR418	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR422	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR423	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR424	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR428	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR429	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR430	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR431	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR434	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR435	1-216-295-91	CONDUCTOR, CHIP		(2012)	
JR499	1-216-295-91	CONDUCTOR, CHIP		(2012)	
		<TRANSISTOR>			
Q401	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q405	8-729-216-22	TRANSISTOR	2SA1162-G		
Q406	8-729-216-22	TRANSISTOR	2SA1162-G		
		<RESISTOR>			
R401	1-247-804-11	CARBON	75	5% 1/4W	
R402	1-216-113-00	METAL GLAZE	470K	5% 1/10W	
R403	1-216-113-00	METAL GLAZE	470K	5% 1/10W	
R404	1-247-804-11	CARBON	75	5% 1/4W	
R407	1-247-804-11	CARBON	75	5% 1/4W	
R412	1-249-425-11	CARBON	4 7K	5% 1/4W	
R413	1-249-425-11	CARBON	4 7K	5% 1/4W	
R415	1-249-425-11	CARBON	4 7K	5% 1/4W	
R416	1-216-647-11	METAL CHIP	680	0 5% 1/10W	
R417	1-216-645-11	METAL CHIP	560	0 5% 1/10W	
R418	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R421	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R425	1-216-065-00	METAL GLAZE	4 7K	5% 1/10W	
R431	1-216-045-00	METAL GLAZE	680	5% 1/10W	
R432	1-216-045-00	METAL GLAZE	680	5% 1/10W	
R434	1-216-045-00	METAL GLAZE	680	5% 1/10W	
R435	1-216-045-00	METAL GLAZE	680	5% 1/10W	
R439	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R440	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R441	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R442	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R443	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R444	1-216-095-00	METAL GLAZE	82K	5% 1/10W	
R450	1-216-627-11	METAL CHIP	100	0 5% 1/10W	
R453	1-208-784-11	METAL CHIP	1 2K	0 5% 1/10W	
R454	1-216-025-91	METAL GLAZE	100	5% 1/10W	

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The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie

REF. NO	PART NO.	DESCRIPTION	REMARK
		MISCELLANEOUS	
⚠	1-402-952-11	COIL, DEMAGNETIZATION	
	1-417-178-11	SELECTOR, ANTENNA (AS-2) (KV-32V16)	
	1-504-524-11	SPEAKER (8CM) (KV-32V16)	
	1-504-531-11	SPEAKER (13 1X6 2CM) (KV-32S12/32S16)	
	1-544-549-11	SPEAKER (KV-32TW67/32TW68)	
⚠	1-751-059-11	CORD, POWER (WITH CONNECTOR) 10A/125V	
*	1-751-135-11	CABLE, PIN (KV-32V16)	
*	1-751-136-11	CABLE, PIN (KV-32V16)	
	1-766-374-11	PLUG, F-PIN (KV-32S12/32S16/32TW67/32TW68)	
⚠	8-451-315-41	DEFLECTION YOKE Y34FXA (VTM)	
V901 ⚠	8-733-739-05	PICTURE TUBE (A80JYV51X)	
		ACCESSORIES AND MATERIALS	
	X-4031-138-1	DOOR ASSY, GLASS (KV-32TW67/32TW68)	
	1-769-181-11	MOUSE, INTERIJENT CABLE (KV-32V16)	
	2-352-981-01	SPACER (KV-32WT67/32TW68)	
	2-359-505-01	RETAINER, MAGNET (KV-32TW67/32YW68)	
*	3-704-356-01	SHEET (STANDARD), PROTECTION (KV-32TW67/32TW68)	
	3-756-618-21	MANUAL, INSTRUCTION (ENGLISH) (KV-32TW67 /32TW68)	
	3-756-618-41	MANUAL, INSTRUCTION (SPANISH) (KV-32TW67 /32TW68)	
	3-758-286-21	MANUAL, INSTRUCTION (ENGLISH) (KV-32S16 (Canadian))	
	3-758-286-31	MANUAL, INSTRUCTION (FRENCH) (KV-32S16 (Canadian))	
	3-758-289-21	MANUAL, INSTRUCTION (ENGLISH) (KV-32S12/32S16 (US)/32V16)	
	3-758-289-31	MANUAL, INSTRUCTION (FRENCH) (KV-32S12 (Canadian) /32V16 (Canadian))	
	3-758-289-41	MANUAL, INSTRUCTION (SPANISH) (KV-32S12 (US) /32S16 (US) /32V16 (US))	
	3-758-287-21	MANUAL, INSTRUCTION, CABLE MOUSE (KV-32V16 (US))	
	3-758-287-31	MANUAL, INSTRUCTION, CABLE MOUSE (KV-32V16 (Canadian))	
	3-758-287-41	MANUAL, INSTRUCTION, CABLE MOUSE (KV-32V16 (US))	
*	4-030-895-01	JOINT (KV32TW67/32TW68)	
*	4-040-144-01	CUSHION (LOWER) (ASSY) (KV-32S12/32S16)	
*	4-040-413-01	CUSHION (LOWER) (ASSY) (KV-32TW67/32TW68)	
*	4-043-598-01	CUSHION (LOWER) (ASSY) (KV-32V16)	
*	4-040-146-01	INDIVIDUAL CARTON (KV-32S12/32S16)	
*	4-040-420-02	INDIVIDUAL CARTON (KV-32TW67/32TW68)	
*	4-043-599-01	INDIVIDUAL CARTON (KV-32V16)	
*	4-040-412-01	CUSHION (UPPER) (ASSY) (KV-32TW67/32TW68)	
*	4-043-597-01	CUSHION (UPPER) (ASSY) (KV-32V16)	
*	4-044-388-01	CUSHION (UPPER) (ASSY) (KV-32S12/32S16)	
*	4-040-414-01	SHEET, CORRUGATED FIBERBOARD (KV-32TW67/32TW68)	
*	4-040-416-01	TRAY (KV-32TW/32TW68)	
	4-041-162-01	PIN, RACK (KV-32TW67/32TW68)	
*	4-041-259-01	BAG, PROTECTION	
*	4-041-362-01	HINGE SET (KV-32TW67/32TW68)	
	4-043-736-01	FILTER, MOUSE (KV-32V16)	
	4-043-737-01	HOLDER, FILTER (KV-32V16)	
		REMOTE COMMANDER	
	1-466-966-11	REMOTE COMMANDER (RM-Y116) (KV-32S16 (Canadian))	
	9-903-826-01	COVER, BATTERY (FOR RM-116) (KV-32S16 (Canadian))	
	1-467-059-21	REMOTE COMMANDER (RM-Y118) (KV-32TW67/32TW68)	
	9-903-826-01	COVER, BATTERY (FOR RM-118) (KV-32TW67/32TW68)	
	1-467-621-11	REMOTE COMMANDER (RM-Y121) (KV-32S12/32S16 (US)/32V16)	
	9-907-089-01	COVER, BATTERY (FOR RM-Y121) (KV-32S12/32S16 (US)/32V16)	

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Consumer A&V Products Company
TV & Display Products Div.

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